



16th DSBS

Deep-Sea Biology Symposium

Brest, 12-17 September 2021

Program of the sessions

Version 11th of September 2021

Room Legend

Auditorium

Event Hall

Sunday 12/09

		Online events
16:30 - 18:00	DSBS Registration	
18:00 - 20:00	Icebreaking reception	
19:00+2 UTC		Combined ECR/Student Mixer Chair: Ilysa Iglesia

Monday 13/09

		Online events
07:45	DSBS Registration	
Opening Session		
08:20 - 09:00	Welcome, local government representatives and the President of the Deep-Sea Biology Society	
Plenary Session		
09:00 - 09:35	Keynote talk: Sabine Gollner (onsite) - Deep-seabed mining: Integrating knowledge on resilience of benthic communities to management and governance Chair : Daniela Zeppilli	
Parallel Sessions		
	Special 1g/1h: deep-sea mining Chairs: Erik Simon Lledo (onsite) & Matthias Haeckel (online)	General 2: Biodiversity Chair: Elisa Baldrighi (on site)
09:35 - 09:50	Malcolm Clark (online – New Zealand)	Charles von der Meden (online – South Africa)

	The effects of sedimentation in the deep sea: emerging results from New Zealand on the impacts of potential seabed mining	Prime Primnoid real estate: Quantifying complex surface area of biogenic habitat and incidence of use	
09:50 - 10:05	Travis Washburn (online – Japan) Benthic Responses to One of the First Excavation Tests Targeting Deep-Sea Seafloor Massive Sulfides	Bhavani Narayanaswamy (online – UK) Spatial changes in benthic megafaunal community composition in the Barents Sea across Atlantic	
10:05 - 10:20	Rachel Boschen-Rose (online – UK) Integrated environmental management for deep-sea mining: Perspectives from the Kermadec Volcanic Arc, New Zealand	Heidi Meyer (online – Norway) The Secrets of the Schulz Bank - Exploring the community structure of deep-sea sponge grounds on an Arctic Seamount	
10:20 - 10:35	Jeffrey Drazen (on line - USA) Designing environmental baseline surveys to detect midwater impacts of nodule mining in the eastern CCZ	Marie-Anne Cambon (on site) Niche partitioning in the <i>Rimicaris exoculata</i> holobiont: the case of the first symbiotic Zetaproteobacteria	
10:35 - 10:50	Daniel Jones (on site) Seabed Mining and Resilience to Experimental Impact	Miguel Guerreiro (on site) Applying 3D models to study Deep-Sea Cephalopod Distribution in the North East Atlantic	
10:50 - 11:05	Jessica Perelman (online - Hawaii) Mesopelagic scattering layer behaviors across the Clarion-Clipperton Zone: Implications for deep-sea mining	Julien Marticorena (on line - France) Hydrothermal food web recovery after a small-scale disturbance on the Lucky Strike vent field (MAR)	
11:05- 11:25	Coffee Break – Broadcast 10 videos Poster		
	Special 1g/1h: deep-sea mining Chairs: Sabine Gollner (onsite) & Matthias Haeckel (online)	General 2: Biodiversity Chair: Joan Alfaro Lucas (onsite)	
11:25 - 11:40	Matthias Haeckel (online – Germany) Impacts of deep seabed mining – Initial results from the trial of a pre-prototype manganese nodule collector	Clara Diaz (online – UK) Environmental drivers of the Mesophotic Coral Ecosystems community structure over the depth gradient in the Chagos Archipelago, Indian Ocean.	

11:40 - 11:55	Nancy Fabiola Mercado Salas (online – Germany) On the importance of reference libraries in deep-sea monitoring at the Clarion Clipperton Fracture Zone	Andreas Hans-Jürgen Kelch (online – Germany) Biodiversity assessment of the isopod family Paramunnidae Vanhöffen, 1914 (Crustacea, Malacostraca) from the Weddell Sea, Southern Ocean	
11:55 - 12:10	Lenaick Menot (on site) Macrofaunal assemblages in iSMS-associated metalliferous sediments of the mid-Atlantic Ridge: community structure and trophic ecology	Gabriella Luongo (online – Italy) Benthic prokaryotic assemblages and virus-host interactions in deep-sea sediments of the Ross Sea (Antarctic Ocean)	
12:10 - 12:25	Muriel Rabone (on site) A deep dive into DeepData: taxonomic records in the ISA biological data holdings and the published literature for the CCZ	Elisa Baldrighi (on site) Different benthic size classes shed light on deep-sea fauna small- scale spatial patterns	
12:25 - 12:40	Elin Thomas (online – UK) Deep-sea mining and the global extinction risk to vent-endemic species	Harriet Baldwin (on site) Benthic functional biodiversity across a habitat complexity gradient within the deep-sea coral reefs of the rockall bank, NE Atlantic	
12:40 - 12:55	Katja Uhlenkott (on site) Distribution modelling with random forest in a potential deep-sea mining area	Jaime Andres Rios Osorio (on site) Spatial patterns of benthic mega-fauna associated to Cold-water coral reefs on the continental margin off Angola	
12:55 - 13:10	Jesse van der Grient (on site) What can shallow-water animal sensitivity thresholds to increased suspended sediments teach us about the effects of deep-sea mining plumes?	Verena Tunnicliffe (online - Canada) Beta-Diversity Metrics Assess Biodiversity Distribution in Hydrothermal Vent (and Other) Deep-sea Ecosystems	
13:00- 14:15	Lunch		13:30-14:15+2 UTC Breakout rooms- Gathering Online community Keynote: Sabine Gollner Moderate: Eleonora Puccinelli Meeting ID: 878 4719 2312
14:15 – 14:50	Keynote talk: Amy Baco A Community Consensus on Designating Vulnerable Marine Ecosystems from Imagery		

	Chair: Adrian Glover (onsite)		
	Special 1g/1h: deep-sea mining Chairs: Elisa Baldrighi (onsite) & Jeroen Ingels (online)	General 2 : Biodiversity Chair: Bhavani Narayanaswamy (online – UK)	
14:50 - 15:05	Craig Smith (on site) Patterns of Seafloor Biodiversity and Ecosystem Function in the Clarion Clipperton Zone: Are No-Mining Areas Representative of Regional Patterns?	Poppy Keogh (online – Canada) The Charlie-Gibbs Fracture Zone – Biodiversity, Community Composition and What Drives Them	
15:05 - 15:20	Erik Simon-Lledó (on site) Regional patterns in biodiversity of abyssal benthic megafauna at the Clarion Clipperton Zone	Amy McAllister (online – Canada) Resolving food webs in the Labrador sub-Arctic deep sea	
15:20 - 15:35	Tanja Stratmann (on site) Regional differences in carbon cycling in a prospective deep-seabed mining area in the eastern Clarion-Clipperton Fracture Zone (Pacific)	Ana Karoline Avila (online – Brazil) Whale falls as chemosynthetic ‘stepping-stones’: perspectives from the meiofauna	
15:35 - 15:50	Nelia Mestre (online – Portugal) Ecotoxicological evaluation of deep-sea sediments and nodules	Stace Beaulieu (online – USA) Distinct fauna on inactive sulfides contributes to biodiversity on the East Pacific Rise	
15:50 - 16:05	Chris Smith (online – Greece) Principles and key concepts for ecological restoration in the deepsea	Melissa Betters (online – USA) Rethinking Informative Traits: Environmental Influence on Shell Morphology in Deep-Sea Gastropods	
16:05 - 16:20	Maila Guilhon (online – Brazil) Ecosystem-based Management through the lens of International Seabed Authority stakeholders	Juan Carlos Azofeifa-Solano (online – Costa Rica) Diversity and biology of deep-sea echinoderms from Costa Rica	
16:20 – 16:40	Coffee Break – Broadcast 10 videos Poster		
	General 1 : Conservation Chair: Lara Macheriotou (online – Belgium)	Special 1b: Spatial planning Chair: Elisabetta menini (online)	
16:40 - 16:55	Thomas Dahlgren (on site)	Amelia Bridges (on line - UK)	

	Genetic barcode repository gap analysis – contrasting the beauty with the beast	Filling the data gaps – transferring models from data rich to data poor deep-sea areas to support spatial management	
16:55 - 17:10	Lara Atkinson (online – South Africa) Measuring change in a southern Benguela slope after cessation of trawling	Elisabetta Menini (online – USA) Good news: Protection of active vent ecosystems is growing globally	
17:10 - 17:25	Nicole Morgan (online – USA) Recent fishing footprint of the high-seas bottom trawl fisheries on the Northwestern Hawaiian Ridge and Emperor Seamount Chain: a finer-scale approach to a large-scale issue	Kirsty McQuaid (online – UK) Mapping the South Atlantic to support regional Marine Spatial Planning	
17:25 - 17:40	Peter Etnoyer (online – USA) After the Disaster: Plans for Coral Propagation Activities to Support Restoration of Mesophotic and Deep Benthic Communities Impacted by Deepwater Horizon Oil Spil	Cherisse Du Preez (online – Canada) Identifying Representative Seamount Ecosystems in Large Marine Protected Areas	
18:00 - 19:30+ 2UTC			Student Event: Creating impactful graphics and figures to showcase your science Chair: Illy Iglesias
19:30+2 UTC			Round table: Decolonizing deep-sea science Chair: Raissa Hogan

Tuesday 14/09

			Online-only events
Plenary Session			
08:30 – 09:05	Keynote talk: Moriaki Yasuhara (online – Japan) Chairs: Adrian Glover & Daniela Zeppilli		
Parallel Sessions			
	Special 1f: Climate change Chair: Moriaki Yasuhara (online – Japan)	Special 2a: Honor to Craig Smith Chair: Adrian Glover (onsite)	
09:05 – 09:20	Invited speaker: Chih-Lin Wei (online – Taiwan)	Ashley Rowden (online – New Zealand)	

	Climatic Impact on Deep-sea Ecosystem and its Future Projection	Benthic community patterns at cold seep sites that face potential impact from gas hydrate exploitation	
09:20 – 09:35	Owen Anderson (online – New Zealand) Predicting shifts in areas of habitat suitability for deep-sea corals in New Zealand	Katharine Bigham (online – New Zealand) Megafaunal community resilience to a turbidity flow in Kaikōura Canyon (Aotearoa New Zealand) demonstrated by time-series imagery	
09:35 – 09:50	Daniëlle de Jonge (online – UK) Soft-sediment ecosystem functioning under climate projections at the Cape Verde Basin (North-East Atlantic)	Daphne Cuvelier (online – Portugal) The first whale fall of the Mid-Atlantic Ridge and a year of its succession	
09:50 – 10:05	Daniela Yepes-Gaurisas (online, Brazil) Climate change impacts on Brazilian deep-sea benthic ecosystems	Rob Harbour (online – UK) Benthic and demersal scavenger biodiversity in the Clarion- Clipperto	
	Special 1c: Managing deep sea Chair: Telmo Morato (online – Portugal)	Special 2a: Honor to Craig Smith Chair: Adrian Glover (onsite)	
10:05 – 10:20	David Bowden (online – New Zealand) Predicting distributions of seafloor fauna and communities: are we getting better at it?	Andrew Gooday (on site) Macrofauna-sized foraminifera in core and epibenthic sledge samples frm the eastern Clarion-Clipperton Zone (equatorial Pacific)	
10:20 - 10:35	Charlotte O'Brien (online – UK) Exceptional 20th century shifts in deep-sea ecosystems are spatially heterogeneous and associated with local surface ocean variability	Guadalupe Bribiesca-Contreras (on site) Benthic megafauna of the western Clarion-Clipperton Zone	
10:35 - 10:50	Telmo Morato (online – Portugal) Improved deep-sea biodiversity assessments inform sustainable development of the deep North Atlantic in a changing planet	Ivan Cautain (on site) Investigating the uptake of sympagic and pelagic carbon by Arctic benthos	
10:50 - 11:05	Mia Schumacher (online – Germany) The Atlantic Seascape - A basin-wide automated Classification of Atlantic Sea Floor Habitats	Regan Drennan (on site) Genetic diversity of annelid communities in a region recently covered by an ice shelf	

11:05-11:25	Coffee Break – Broadcast 10 videos Poster		
	Special 1e: Pollutants Chair: Nélia C. Mestre (online - Portugal)	Special 2a: Honor to Craig Smith Chair: Jeff Drazen (online)	
11:25 - 11:40	Serena Martina Abel (online – Germany) Plastic pollution in the abyssal and Hadal sediments of the Kuril Kamchatka trench	Marta Maria Cecchetto (online – UK) Abyssal seafloor response to fresh phytodetrital input across regional spatial scales in 3 Areas of Particular Environmental Interest (APEIs) in the western abyssal Clarion-Clipperton Zone (CCZ)	
11:40 - 11:55	Inês Martins (online – Portugal) Impacts of acute copper concentrations on cold-water corals under an ocean acidification scenario	Alycia Smith ANNULATION (online – UK) Sediment Community Oxygen Consumption, CO ₂ production and bacterial activity determined in situ in the NORI-D license area of the Clarion-Clipperton Zone	
11:55 - 12:10	Nina Vieira (online – Portugal) Modelling the distribution of Abandoned, Lost and Discarded Fishing Gear (ALDFG) on the deep seafloor of the Azores region	Adrian Glover (on site) The biodiversity of animals living on polymetallic nodules	
12:10 - 12:25	Tracey Sutton (online – USA) The Open-Ocean Gulf of Mexico and Deepwater Horizon: A Decadal Synthesis of Research	Franck Lejzerowicz (on line - USA) Benthic nucleic acid from the Clarion-Clipperton Zone and other abyssal regions: what it says about eukaryotic biodiversity patterns	
	Special session: Communication Chair: Olivia Pereira (online)	Special 2a: Honor to Craig Smith Chair: Jeff Drazen (online)	
12:25 - 12:40	Thomas Linley (online – UK) Deep-sea tropes – to resist or play along?	Emily Young (on site) Biodiversity, community structure and ecosystem function of organic-rich habitats on the Washington-Oregon margin	
12:40 - 12:55	Torben Riehl (online – Germany)	Andrew Thurber (on site) Framing deep-sea research around ecosystem ecology and services to co-advance science and holistic	

	“Deep-Sea and Marine Research” — The new exhibition at the Senckenberg Natural History Museum	management: A Case Study from Cascadia Margin’s Cold Seeps	
12:55 - 13:10	Brandon Gertz (online – USA) Podcasts as Tools for Deep Sea Science and Policy Communication	Kenneth Halanych (online, USA) Benthic megafaunal invertebrate diversity of the West Antarctic Peninsula	
13:10 - 14:15	Lunch		13:30-14:15+2 UTC Breakout rooms- Gathering Online community Keynotes: Moriaki Yasuhara & Amy Baco Moderate: Eleonora Puccinelli Meeting ID: 838 4450 5621
14:15 – 14:50	Keynote talk: Kerry Sink ‘Deep Insights: Developing country lessons for deep ocean protection’ (online – South Africa) Chair: Kerry Howell		
	Special 2c: North-West Pacific Chair: Hanieh Saeedi (online)	Special 2a: Honor to Craig Smith Chair: Andrew Sweetman (online)	
14:50 - 15:05	Hanieh Saeedi (online – Germany) Marine biodiversity in the NW Pacific and the adjacent Arctic Ocean	Amanda Demopoulos (online – USA) Stable isotopes reveal heterogenous carbon sources at several seeps along the U.S. Atlantic margin	
15:05 - 15:20	Mizuki Ohta (online - Japan) How does the swimming ability of deep-sea isopods affect the vertical distribution and speciation?	Guilherme Siqueira Toledo de Carvalho (online – Brazil) Wood-eating bivalves of the deep Southwestern Atlantic	
15:20 - 15:35	Joan Alfaro Lucas (on site) Diversity patterns, endemism and bioregions of the Arctic Ocean	Jeroen Ingels (online – USA) Assessing model-predicted hydrodynamic disturbance using meiofauna and nematode community metrics – a case study from the deep Florida Escarpment in the Gulf of Mexico	
15:35 - 15:50	Chhaya Chaudhary (online – Germany) Global distribution of corals and their associated taxa under climate change	Jill Bourque (online – USA) Infaunal communities associated with deep-sea coral habitats in the western Atlantic	

15:50 - 16:05	Dmitrii Pantiukhin (online – Germany) Modelling of Arctic gelatinous zooplankton distribution and abundance based on data from pelagic video transects in Fram Strait	Marta Miatta (online – Canada) Sea pen fields as biogenic habitats for macroinfaunal communities in deep-sea sediments: Evidence from the Laurentian Channel MPA	
16:05 - 16:20	Henry Knauber (online – Germany) Evolution and Biogeography of the <i>Haploniscus belyaevi</i> species complex	Lisa Levin (online – USA) Macrobenthos of phosphorite and Fe-Mn crust hardgrounds in the Southern California Borderland	
16:20 - 16:40	Coffee Break – Broadcast 10 videos Poster		
16:40 - 17:40	Poster session - Broadcast 30 videos Poster		
17:40 - 19:00	Poster session - Discussions		Breakout rooms- Poster and a drink Meeting ID: 86 703 639 268

Wednesday 15/09

			Online-only events
Plenary Session			
08:30 - 09:05	Keynote talk: Christian Tamburini - Shedding light on the dark ocean: why it is important to maintain the in situ conditions to estimate prokaryotic diversity and activity Chair : Anne Godfroy (onsite)		
Parallel Sessions			
	Special 2d: Bioluminescence Chair: Séverine Martini (on site)	General 2: Biodiversity Chair: Ana Colaço (onsite)	
09:05 - 09:20	Manabu Bessho-Uehara (online – Japan) Biochemical characterization of diverse deep-sea anthozoan bioluminescence systems	Helen Armstrong (online – New Zealand) Habitat use of deep-sea chondrichthyans	
09:20 - 09:35	Heather Bracken-Grissom (online – USA) Deep-Sea Lights: The Diversification and Function of Photophores in Sergestid Shrimps	Savannah Goode (online – New Zealand) Using substrate and seafloor terrain variables to explain benthic community structure and predict community distributions on two New Zealand seamounts	

09:35 - 09:50	José Paitio (online - Japan) Light shading mechanism in neoscopelid fish <i>Neoscopelus microchir</i>	Akira Iguchi (online – Japan) Comparative analysis at multiple taxa levels reveals ecologically relevant dynamics of biodiversity among seamounts	
09:50 - 10:05	Jérôme Mallefet (on site) The kitefin shark, <i>Dalatias licha</i> : first study and comparative aspects with lantern sharks	Leah Bergman (online – Japan) The Kuruse Hole: A unique, warm deep-sea environment in the Izu- Bonin Arc, Japan dominated by viperfishes (genus <i>Chauliodus</i>)	
	Special 2e: Microbiology Chair: Patricia Velez (online)	General 2: Biodiversity Chair: Ana Colaço (onsite)	
10:05 - 10:20	Iines Salonen (online – Japan) Metabarcoding observations on species-specific microbiomes of deep-sea benthic foraminifera	Javier Montenegro (online – Japan) Towards a standardized threshold on the molecular identity of gelatinous zooplankton: study case of family Halicreatidae at the Clarion-Clipperton Zone	
10:20 - 10:35	Lara Macheriotou (online – Belgium) Global patterns of deep-sea nematode genetic diversity	Camille Poitrimol (on site) Contrasted phylogeographic patterns of hydrothermal vent gastropods along Southwest Pacific back-arc basins	
10:35 - 10:50	Diana Salcedo (on site) Functional role of fungi in the trophic structure and carbon flux in deep-sea hydrothermal vents of the southern Gulf of California, Mexico	Florence Pradillon (on site) Apartment-sharing at deep-sea hydrothermal vents: how <i>Rimicaris</i> spp. vent shrimps co-exist on the Mid-Atlantic Ridge	
10:50 - 11:05	Pierre-Antoine Dessandier (on site) Benthic foraminiferal adaptability to hydrothermal conditions: a case of study from the Lucky Strike vent field (Mid-Atlantic ridge)	Genki Ishiyama (on site) Geographic distance matters: diversification process in the deep-sea snail genus <i>Bathyanicstrolepis</i> (Gastropoda: Buccinidae)	
11:05- 11:25	Coffee Break – Broadcast 10 videos Poster		
	Special 2e: Microbiology Chair: Patricia Velez (online)	General 2: Biodiversity Chair: Javier Montenegro (online, Japan)	

11:25 - 11:40	Sarah Hu (online – USA) Microbial eukaryotic diversity & grazing activity at deep-sea hydrothermal vents	Ana Colaço (onsite) Should I lodge or should I devour? The functional role of <i>Pheronema carpenteri</i> to its associated fauna	
11:40 - 11:55	Jesica Abril Hernandez-Monroy (online – Mexico) Pairwise fungal-bacterial interactions as a model to understand dynamics in deep-sea hydrothermal systems at the southern Gulf of California	Roberto Danovaro (online – Italy) Resilience of the Palinuro Seamount ecosystem after mechanical disturbance	
	Special 2f: Microbiology Chair: Anais Cario (onsite)	General 2: Biodiversity Chair: Javier Montenegro (online, Japan)	
11:55 - 12:10	Blandine Trouche (on site) Diversity and Biogeography of bathyal and abyssal seafloor Bacteria and Archaea along a Mediterranean – Atlantic gradient	Davide Di Franco (online – Germany) Environmental drivers of peracarid assemblages from the Southern Ocean	
12:10 - 12:25	Katrin Busch (online – Germany) Biodiversity of deep-sea sponge microbiomes across environmental gradients	Denise Swanborn (online - UK) Quantifying and assessing the importance of seamount habitat heterogeneity	
12:25 - 12:40	Samuel MARRE (onsite) High-pressure transparent microfluidics reactors: new tools for investigating the deep-sea biosphere at lab scale	Jade Castel (on site) A story of divergence and inter-specific exchanges in deep-sea hydrothermal vent gastropods <i>Alviniconcha</i>	
12:40 - 12:55	Paraskevi Mara (online – USA) Microbes along the permanently stratified redoxcline and the deep euxinic zone in Cariaco Basin contain diverse secondary metabolite gene clusters	Barbara Górka (on site) Macrobenthic biodiversity response to climate warming driven environmental change in the Arctic deep-sea (HAUSGARTEN, Greenland Sea 79°N)	
12:55 - 13:10	Anne Dekas (online – USA) A single-cell view of microbial activity in the deep-sea with nanoscale secondary ion mass spectrometry (nanoSIMS)	Saskia Brix (on site) Habitat variability and faunal zonation at the Aegir Ridge, a canyonlike structure in the deep Norwegian Sea	

13:10 – 14:15	Lunch	13:30-14:15+2 UTC Breakout rooms- Gathering Online community Keynotes: Christian Tamburini & Kerry Sink Moderate: Eleonora Puccinelli Meeting ID: 886 9676 8459
14:15 - 18:00	Social activities	
20:00 - 23:00	Gala dinner	
22:00 – 00:00+2 UTC		Virtual social event Chairs: Mackenzie Gerringer & Guilherme Siqueira Toledo de Carvalho

Thursday 16/09

		Online-only events
Plenary Session		
08:30 - 09:05	Keynote talk: Johanna Weston - Thriving under pressure: What amphipods can teach us about the ecological and evolutionary dynamics across the hadal zone Chair: Mauricio Shimabukuro	
Parallel Sessions		
	Special 4a: Vision Chair: Vanessa Stenvers (onsite)	Special 2b: Hadal Chair: Mauricio Shimabukuro (onsite)
09:05 - 09:20	Invited speaker: Tom Cronin (online – USA) Tribute to Michael Land	Anna Sobek (online – Sweden) Organic matter degradation leads to higher concentrations of persistent organic pollutants in hadal sediments
09:20 - 09:35	Anna-Lee Jessop (online – Australia) Eye diversity in mesopelagic hyperiid amphipods	Peter Stief (online – Denmark) Marine snow in the deep sea: Effect of hydrostatic pressure on microbial degradation and colonization of model diatom aggregates
09:35 - 09:50	Tamara Frank (online – USA)	John Paul Balmonte (online – Denmark)

	Unusual Visual Pigment Systems in Deep-sea Crustaceans Correlated with Bioluminescence	Microbial enzymatic activities from surface to hadal hydrostatic pressures	
09:50 - 10:05	Eric Warrant (online – Sweden) A tale of two fishes: The visual ecology of two deep-sea predatory fishes	Ronnie N. Glud (online – Denmark) Microbial carbon and nitrogen mineralization in hadal sediments	
10:05 - 10:20	Ronald Douglas (online – UK) The evolution of complex ocular diverticula in deep-sea barreleye spookfish (Opisthoproctidae)	Clemens Schauburger (online – Austria) Effects of biogeochemistry and biogeography on benthic microbial community composition of hadal sediments	
10:20 - 10:35	Fanny de Busserolles (online – Australia) Nocturnal coral reef fishes shed light on the function of the multibank retina, a common visual adaptation in deep-sea fishes	Mathias Middelboe (online – Denmark) Bacteria and viruses in hadal sediments: Spatial variations and evidence of prophage-encoded genes supporting bacterial growth	
10:35 - 10:50	Zuzana Musilova (online - Czech Republic) To see and not to be seen with 38 rhodopsins: silver spinyfin (Diretmidae, Teleostei) extraordinary vision	Daniel Leduc (online – New Zealand) Distribution of hadal infauna and their contribution to Kermadec Trench biodiversity	
10:50 - 11:05	Fabio Cortesi (online – Australia) Current challenges facing deep-sea vision research and possible ways forward	Mauricio Shimabukuro (on site) High hadal meiofauna standing stock and linkage to food availability	
11:05 - 11:25	Coffee Break – Broadcast 10 videos Poster		
	General 4: Adaptation Chair: Alexandra Weber (on site)	General 2: Biodiversity Chair: Barbara Górska (on site)	
11:25 - 11:40	Mark Royer ANNULATION (online – USA) Scalloped hammerhead shark swimming performance and thermoregulation strategies during deep dives into cold water – evidence of marine mammal-like breath	Ella Treloar (onsite) Benthic Community Trends Along a Habitat Complexity Gradient Within the Deep-sea Coral Reefs of The Rockall Bank, NE Atlantic	
11:40 - 11:55	Maria Batour (onsite)	Neus Campanyà-Llovet (online – Portugal)	

	Characterization of polysaccharide degradation enzymes in hyperthermophilic archaea and their role in adaptation to high hydrostatic pressure	Application of a trait-based approach on Marine Protected Areas from the Mid Atlantic Ridge	
11:55 - 12:10	Lorenzo Carré (on site) High pressure effect on DNA polymerases activities from deep-sea and surface thermophilic microorganisms	Francisca Carvalho (online – Norway) Diversity patterns and biogeographic affinities of North Atlantic deep-sea rock sponges	
12:10 - 12:25	Sébastien Duperron (on site) The dynamics of gill tissue in symbiont-bearing Bathymodiolus mussels: first visual insights into apoptosis, cell proliferation and differentiation patterns	Magalie Castelin (on site) Diversity and structure of Porifera and symbiotic microbial communities living on the seamounts of the New Caledonian EEZ	
12:25 - 12:40	Jie Lyu (on site) Extremophilic marine viruses from deep sea hydrothermal vents	Loïc Van Audenhaege (on site) 7-year monitoring of the spatio-temporal evolution of hydrothermal assemblages at the centimeter-scale of a diffuse-flow habitat	
12:40 - 12:55	Jacob Winnikoff (on site) Grease under pressure: Temperature-Independent Depth Adaptation of Ctenophore Lipidomes	Mari Heggernes Eilertsen (on site) The fauna of Loki's Castle vent field on the Arctic Mid-Ocean Ridge	
12:55 - 13:10	Magali Zbinden (on site) How do hydrothermal shrimps perceive their environment?	Chris Yesson (on site) Deep-sea benthic habitats and trawling impacts in the offshore Greenland halibut fishery, Davis Strait, west Greenland	
13:10 - 14:15	Lunch		13:30-14:15+2 UTC Breakout rooms- Gathering Online community Keynote: Johanna Weston Moderate: Eleonora Puccinelli Meeting ID: 894 2976 4316
14:15 - 14:50	Keynote talk: Stephane Hourdez - Metazoan adaptation to deep-sea hydrothermal vents Chair: Marjolaine Matabos		
	General 4: Adaptation Chair: Alexandra Weber (on site)	General 2: Biodiversity Chair: Neus Campanyà-Llovet (online – Portugal)	

14:50 - 15:05	April Stabbins et al. (online – USA) Importance of chemosynthetic productivity to a recently discovered methane seep coral from the Pacific Costa Rican margin	Paulo Vinicius Ferraz Corrêa (online – Brazil) Megafaunal community structure on ferromanganese crusts and adjacent areas on Rio Grande Rise	
15:05 - 15:20	Mackenzie Gerring (online – USA) Habitat influences skeletal morphology and density in the snailfishes (family Liparidae)	Marcelo Melo (online – Brazil) DEEP-OCEAN project: revealing the diversity of deep-sea fishes in the Brazilian EEZ, western South Atlantic	
15:20 - 15:35	Rachel O'Neill (online – USA) Deep-Ocean Genomes Project: accelerating discovery of deep-sea adaptations and biodiversity	Virginia Biede (online – USA) Cold-water coral assemblages on Koko Guyot in the Emperor Seamount Chain	
	Special 6a: Biomimicry Chairs: Julia Sigwart, Daniela Zeppilli (onsite)	General 2: Biodiversity Chair: Neus Campanyà-Llovet (online – Portugal)	
15:35 - 15:50	Julia Sigwart (on site) Connections between microbial and macrofaunal response to methane seepage	Emily Cowell (online – USA) Assessing biogenic habitat successional thresholds across the methane seep landscape of the Costa Rican Pacific Margin	
15:50 - 16:05	Sylvia Collicec-Jouault (on site) Deep-sea hydrothermal vent bacteria: a unique source of glycosaminoglycan-mimetic exopolysaccharides for biomedical applications	Danielle DeLeo (online – USA) Genetic diversity and connectivity of chemosynthetic seep mussels (<i>Bathymodiulus</i> spp.) from the U.S. Mid-Atlantic margin	
16:05 - 16:20	Ryan Young (on site) Diving Deep for Drug Discovery	Rachel Eckley (online – USA) Population dynamics, vertical distribution, and trophic ecology of whalefishes (Cetomimidae) in the bathypelagic Gulf of Mexico	
16:20 - 16:35	Deniz Tasdemir (online – Germany) Discovery of Novel Anticancer Metabolites from the Deep-sea <i>Latrunculia</i> Sponges from Antarctica	Thomas Hourigan (online – USA) Varied and Valuable: Characterizing High-Density Deep-Sea Coral and Sponge Communities of the Hawaiian Region	
16:35 - 16:50	Janna Nawroth (online – USA)	Olívia Pereira (online – USA)	

	Developing workflows for bioinspired design studies on rare, deep-sea animals	Connections between microbial and macrofaunal response to methane seepage	
16:50 - 17:10	Coffee Break – Broadcast 10 videos Poster		
17:10 - 19:30	Round table - General 6: Biomimicry - organized together with CEEBIOS Chairs: Justine Pittera (Ifremer) et Juliette Verseux (CEEBIOS)	Round table & talks - special 1d: Stewardship Chair: Lucy Woodall (online UK)	
17:10 - 17:25		Kerry Howell (online UK) Challenger 150 - an inclusive, global deep Ocean Decade program	
17:25 - 17:40		Carlos Dominguez-Carrió (online Portugal) The Azor drift-cam: an affordable and easy-to-use underwater video system for a rapid appraisal of deep-sea benthic habitats	
17:40 - 17:55		Joana Xavier (online Portugal) DEEPbaseline – co-developing a knowledge baseline on the diversity and distribution of deep-sea vulnerable marine ecosystems of the Portuguese mainland shelf and slope	
17:55 - 18:10		Paris Stefanoudis (onsite) Assessing the open access landscape in deep-sea biodiversity research: status, progress and options	
18:10 - 19:30		Round table	
19:30 – 20:30+2 UTC			DSBS Annual General Meeting (AGM)

Friday 17/09

Online-only events

Plenary Session		
08:30 - 09:05	Keynote talk: Kim Juniper - So, what's the deal with cabled observatories in the deep sea? Chair: Jozée Sarrazin	
Parallel Sessions		
	Special 5b: Artificial Intelligence Chair: Catherine Borremans (onsite)	General 3: Life-history traits and connectivity Chair: Kathrin Busch (online - Germany)
09:05 - 09:20	Mehul Sangekar (online – Japan) Dealing with Diversity: Data-driven unsupervised clustering on diverse deep-sea image collections	Craig Young (online – USA) Isotopic evidence for demersal development in the larval shells of cold-seep mussels, and a possible bet-hedging dispersal strategy
09:20 - 09:35	Erin Browne (online – UK) Development of a method for real-time AI analysis of live ROV video	Maria Belen Arias (online – UK) Population structure and connectivity patterns of the arctic deep-sea sponge <i>Geodia hentscheli</i>
09:35 - 09:50	Nils Piechaud (onsite) Investigating the advantages of semi-automated counting of a benthic species for studying fine scale distribution patterns	Anna Patova (online – Norway) Population genomics of <i>Vazella pourtalesii</i> sponge grounds of the Northwest Atlantic: implications for conservation of deep-sea Vulnerable Marine Ecosystems
09:50 - 10:05	Marjolaine Matabos (on site) Deep Sea Spy: from citizen annotation to artificial intelligence	Karin Steffen (online – Sweden) Sponge ground connectivity across Atlantic waters: case study of <i>Geodia barretti</i> using ddRADseq
10:05 - 10:20	Chloe Game (on site) Broad benthic habitat classification: a 'user-friendly' and simple approach to streamline analysis of image surveys	Coral Diaz-Recio Lorenzo (on site) Genome-wide Single Nucleotide Polymorphisms (SNPS) uncover fine-scale population structure and demographic histories of vent-endemic copepods: Implications for resilience to deep-sea mining
10:20 - 10:35	Abdul Qayyum (on site) A comprehensive review of artificial intelligence-based approaches for biodiversity studies in the deep sea	Sylvie Gaudron (on site) Inferring functional traits in a deep-sea wood-boring bivalve using dynamic energy budget theory
	General 5:	General 3:

	Access Chair: Nils Piechaud (online – UK)	Life-history traits and connectivity Chair: Kathrin Busch (online – Germany)	
10:35 - 10:50	Melissa Hanafi Portier (on site) When imagery and physical sampling work together: towards an integrative methodology of image-based megafauna identification	Autun Purser (on site) In situ observations from the central Arctic and Weddell Sea indicate sponge locomotion in under-ice environments plays a role in juvenile dispersal	
10:50 - 11:05	Véronique Merten (on site) Environmental DNA metabarcoding to uncover patterns of diversity and distribution in deep-sea cephalopods	Pierre Methou (on line - Japan) Reproductive strategies in vent shrimps shaped by feeding ecology with intriguing seasonality	
11:05- 11:25	Coffee Break – Broadcast 10 videos Poster		
	General 5: Access Chair: Nils Piechaud (online – UK)	General 3: Life-history traits and connectivity Chair: Maria Belen Arias (online – UK)	
11:25 - 11:40	Sophie Arnaud-Haond (on site) eDNAbyss: Toward a concerted DNA-based exploration of the largest biome on earth	Jim Barry (on line - USA) Hydrothermal warm springs: hot spots for deep-sea octopus reproduction	
11:40 - 11:55	Thomas Chen (online – USA) Classifying and Semantically Segmenting Deep Sea Fish in Imagery with a Novel Automated Machine Learning Methodology	Vincent Mouchi (on site) Connectivity of the deep-sea hydrothermal gastropod species <i>Shinkailepas tollmanni</i> : a geochemical approach by elemental fingerprinting	
	Special 5a: Ecosystem dynamics Chair: Pierre-Marie Sarradin et Nadine Lantéri (onsite)	General 3: Life-history traits and connectivity Chair: Maria Belen Arias (online – UK)	
11:55 - 12:10	Andrew Gates (online - UK) Understanding multi-decadal change in the deep ocean: atmosphere to seafloor at the Porcupine Abyssal Plain Sustained Observatory, NE Atlantic	Vasiliki Koutsouveli (online - Germany) Reproductive biology of the deep-sea sponge genera Geodia and Phakellia: histological, lipididomic and transcriptomic approaches	
12:10 - 12:25	Pierre-Marie Sarradin (on site) Temporal dynamics of the Lucky Strike hydrothermal vent field – the EMSO Azores observatory	Adrien Tran Lu Y (on site)	

		Global to fine-scale patterns of genomic connectivity of hydrothermal vent gastropod <i>Ifremeria nautilei</i> in the Western Pacific	
12:25 - 12:40	Helena Hauss (online – Germany) Epi- and mesopelagic zooplankton time series at the Cape Verde Ocean Observatory	Lauren Dykman (online – USA) Discovering the complex life cycles of hydrothermal vent parasites	
12:40 - 12:55	Rylan Command (online – Canada) Temporal dynamics of the deep-sea pink urchin <i>Strongylocentrotus fragilis</i> at the upper slope of Barkley Canyon	Graeme Guy (online – Canada) Recruitment of deep-water corals and sponges on the continental slope off Nova Scotia, Canada: Implications for population connectivity and conservation	
12:55 - 13:10	Mallory Ringham (online – USA) Exploration of fine-scale physical-biogeochemical environment over deep coral reefs on the West Florida slope using integrated ROV-lander-sensor systems	Michelle Hauer (online – USA) Population genomics of the symbionts of hydrothermal vent snail <i>Alviniconcha hessleri</i> reveals greater differentiation by vent site than by host-associated vs free-living states	
13:10 - 14:15	Lunch		13:30-14:15+2 UTC Breakout rooms- Gathering Online community Keynotes: Kim Juniper & Stéphane Hourdez Moderate: Eleonora Puccinelli Meeting ID: 870 1939 8812
14:15 - 14:30	Tribute to Anne Rognant		
	Special session: Arts & Science Chair: Jozée Sarrazin (on site)	General 2 : Biodiversity Chair : Magalie Castelin (on site)	
14:30 - 14:45	Christine Paillard (on site) Marine immersion in arts & sciences	Alessia Caterina Ciraolo (online – Canada) Seafloor ecosystem functioning within the oxygen minimum zone along the continental slope of Vancouver Island	
14:45 - 15:00	Jozée Sarrazin (on site)	Beatriz Mejia-Mercado (online – USA)	

	EMSO-Azores: a tool to raise awareness on deep-sea wonders	Characterization and spatial variation of the deep-sea fish assemblages on Pioneer Bank, Northwestern Hawaiian Islands	
15:00 - 15:15	Dorte Janussen (on site) Polar and deep-sea light as communication medium and source of inspiration	Tina Molodtsova (online - Russian Federation) Are we ready for deep-sea mining? State of the knowledge on ecosystems of the deep-sea mineral deposits after 20 years of exploration contracts	
15:15 - 15:30	Teresa Radziejewska (online, Poland) Children's art as a pathway to ocean literacy	Jennifer Le (online – USA) Using deep-sea imagery to examine ecosystem services associated with methane seeps	
15:30 - 15:45	Jonatha Giddens (online – USA) Drawing the ocean closer: Deep-ocean cameras and an artintegrated exploration approach provide windows and mirrors into the deep sea	Elizabeth Miller (online – USA) Alternating Regimes of Shallow and Deep Diversification in Marine Fishes	
15:45 - 16:00	Vincent Rousselot (on site) COELACANTH project – Music from the depths clotured by a music event (no coffee break)	River Bryant (online – USA) Functional diversity analysis reveals deep-sea energetic niche expansion driven by trait tradeoffs	
16:00 – 16:20		Coffee break	
16:20 – 17:30	Special: open session Chair: Lupita Bribiesca-Contreras (onsite)	Round table - special 1a: UN BBNJ Chair: Jeffrey Marlow (online)	
16:20 – 16:35	Jeremy Horowitz (online - Australia) Morphological innovations drove the persistence of black corals through deep time	Panelists (online)	
16:35 – 16:50	Alexandra Weber (on site) Giant genomes uncover ecological speciation in the deep ocean	16:20 - 16:30: Dr. Marcel Jaspars , "Traceability approaches for marine genetic resources" 16:30 - 16:40: Dr. Arianna Broggiato , "Potential impacts of the BBNJ negotiations for the scientific community – an EU perspective"	
16:50 – 17:05	Henk-Jan Hoving (on site) Pelagic cephalopods as nutrient vectors in the deep sea	16:40 - 16:50: Dr. Judith Gobin , "What the UN's treaty on BBNJ means for deep-sea science in small island developing states"	

17:05 – 17:20	Vanessa Stenvers (on site) Impacts of global warming and deep-sea mining induced sediment plumes on the mesopelagic medusa <i>Periphylla periphylla</i>	16:50 - 17:00: Dr. Daniel Wagner , "The Salas y Gomez and Nazca ridges as a case study for how MPAs could be proposed, designated, and enforced"	
17:20 – 17:30	Broadcast Film	17:00 - 17:30: Discussion among panelists, including audience questions	
17:30 – 18:30	Closing ceremony: Prize awards, results of the voting for the next Symposium venue		