



**ICC**

**10<sup>TH</sup> INTERNATIONAL  
CRUSTACEAN CONGRESS**

22-26 May 2023  
New Zealand

# 10<sup>TH</sup> INTERNATIONAL CRUSTACEAN CONGRESS

22-26 May 2023

New Zealand

# HANDBOOK



**2021  
2030** United Nations Decade  
of Ocean Science  
for Sustainable Development



The Crustacean Society



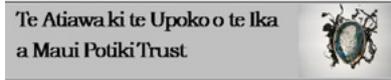
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Copepod



Amphipod



Isopod



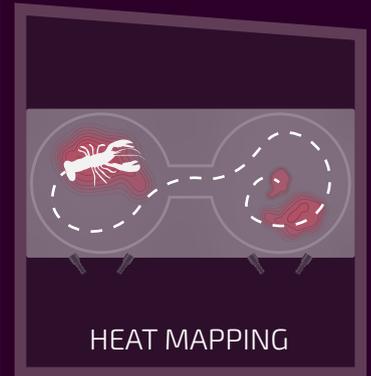
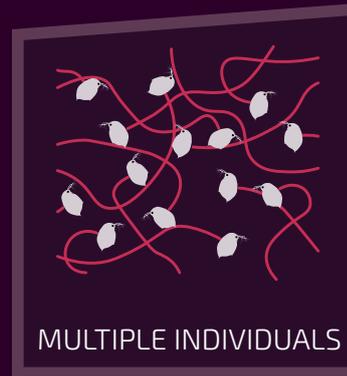
Fish larva

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## ABOUT

Loligo® Systems develops research equipment for aquatic biology. Our products allow scientists all over the world to excel in the fields of swimming performance, respirometry, blood physiology and behavior analysis in a diversity of marine and freshwater organisms. We offer customized solutions as well as free scientific advice and support to anyone in need.

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**Loligo® Systems**

## PRE-EVENT – Sunday, 21 May 2023

17:30-19:30	Informal Meet & Greet @ Mac's Brew Bar (4 Taranaki Street, Wellington)
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## DAY 1 – Monday, 22 May 2023

08:00	<b>Check in desk opens</b> @ Oceania Room, Level 3, Museum of New Zealand Te Papa Tongarewa (55 Cable Street, Wellington)	
08:30-10:00	<b>Pōwhiri</b> All guests gathered in Wellington foyer (level 2) for briefing at 8.45am. Doors close for pōwhiri at 9am.	
10:00-10:30	Kai (Oceania Room)	
10:30-11:30	<b>Conference Opening &amp; Welcome</b> Talks from Mana Whenua, Te Papa, NIWA, TCS & ISIRD Chairs: Co-convenors Kareen Schnabel & Rachael Peart (NIWA) Room: Oceania	
11:30-12:30	Keynote: Tara McAllister Moving towards re(Indigenising) science: actions for change Room: Oceania	
12:30-13:30	Karakia & Lunch (Oceania Room) All posters to go up on display for the full conference	
13:30-14:45	UN Decade of Ocean Science for Sustainable Development: crustaceans helping us work together Chair: Silke Bieda Room: Oceania	Symposium: Science informs fisheries management of lobster in challenging times Kindly supported by: New Zealand Rock Lobster Industry Council Chair: Mark Edwards Room: Rangimarie 1
13:30	<b>Silke Bieda</b> Aotearoa New Zealand and the UN Decade of Ocean Science for Sustainable Development (2021 - 2030)	<b>Martin Taylor</b> Development of a novel methylation-based ageing method for European lobsters ( <i>Homarus gammarus</i> )
13:45	<b>Joseph Covi</b> Protecting coastal diversity by including the living dead: dormant zooplankton in the Anthropocene	<b>Hayley Nessia</b> Looking for <i>Jasus</i> : Challenges and implications of tracking rock lobster in a temperate marine reserve
14:00	<b>Carolyn Lundquist</b> Crustacean Futures: applying the IPBES Nature Futures Framework to develop positive future scenarios for crustaceans	<b>Mark Bestbier &amp; Anjali Pande</b> Aquatic Disease Investigations: Tail Fan Necrosis -Still a mystery
14:15	<b>Tom Brough</b> Modelling approaches for exploring patterns of crustacean biodiversity throughout NZ waters	<b>Benn Hanns</b> Marine protected areas provide unfished reference information to empirically assess fishery status
14:30	<b>Discussion</b>	<b>Discussion</b>
14:45-15:15	Afternoon Tea	
15:15-16:30	Symposium: Sharing the Data: reflections on building and maintaining a global alliance of data information systems Chair: Kevin McKay Room: Oceania	Symposium: Science informs fisheries management of lobster in challenging times (cont'd) Kindly supported by: New Zealand Rock Lobster Industry Council Chair: Mark Edwards Room: Rangimarie 1
15:15	<b>Amanda Windsor</b> Better Living Through Data Standards	<b>Ahmad Farhadi</b> Comparative population genomics in wide ranging spiny lobster species
15:30	<b>Elizabeth Lawrence</b> Crustacean data in the Ocean Biogeographic Information System (OBIS): Current state and future developments in training and community support	<b>Aaron Conroy</b> What the Shell: Skeletal mineralogy of the New Zealand Spiny Rock Lobster ( <i>Jasus edwardsii</i> )
15:45	<b>Keith Crandall</b> DecaNet - bringing together data and digital resources for Decapod Crustaceans	<b>Mark Fenwick</b> Microsporidian parasite in <i>Metanephrops challengerii</i> : implications for a valuable fishery in Aotearoa
16:00	<b>Regina Wetzer</b> Where's my extended specimen? Building towards a globally connected biodiversity science	<b>Discussion</b>
16:15	<b>Leen Vandepitte</b> Fifteen years of the World Register of Marine Species (WoRMS): where are we, and what will the next decade bring?	
Break		
16:45-18:45	<b>Welcome Function</b> (Oceania, Te Papa) With Kapa Haka + beer competition tasting & voting	

## DAY 2 – Tuesday, 23 May 2023

09:00	Housekeeping & Remembrance		
09:30-10:30	Keynote: <b>Megan Porter</b> (University of Hawai'i at Mānoa) The evolution of crustacean visual systems: themes, challenges, and remaining mysteries Chair: Shane Ah Yong Room: Oceania		
10:30-11:00	Karakia & Morning Tea		
11:00-12:15	Symposium: Crustacean Evolutionary Physiology Chair: John McNamara Room: Oceania	Symposium: A Confusion of Crustaceans: Peracarida: Ecology Chair: Sarah Gerken Room: Rangimarie 1	General Talks A: Freshwater and Estuarine crustaceans Chair: Shane Ah Yong Room: Rangimarie 2
11:00	<b>Samuel Faria</b> The adaptationist programme in the crustacean physiology	<b>Jan Beermann</b> The road to success – global dispersal and ecological footprint of the amphipod super-crustacean <i>Jassa</i>	<b>Orlando Lam-Gordillo</b> Long-term changes in estuarine Crustaceans: evaluating the effects of the changing environment
11:15	<b>Shai Avraham Shaked</b> Crayfish exoskeletal phosphate transporters - structural conservation from bacteria and pancrustaceans to mammals with different roles	<b>Katja Kunčič</b> Imaging of the digestive glands and gut morphogenesis in the terrestrial isopod <i>Porcellio scaber</i> by a combination of micro-CT, light microscopy and transmission electron microscopy	<b>Darren Yeo</b> Remoteness revealed: Anambas and Natuna Islands—a microcosm of Southeast Asian freshwater crab diversity
11:30	<b>Joseph Covi</b> First evidence supporting the conservation of physiological mechanisms behind extreme dormancy in crustacean zooplankton	<b>Siena Mckim</b> The Amphipod Silk Road: Unravelling The Evolution of Amphipod Silk	<b>Bryan Soh</b> Trophic ecology of freshwater decapods in the last freshwater swamp forest in Singapore
11:45	<b>Luíza Villela</b> Osmoregulation in nine species of fiddler crabs (Brachyura, Ocypodidae) from the Eastern Pacific coast of Ecuador	<b>Eilish Farrell</b> What does the future hold for a small, but powerful, amphipod bioturbator in the Wadden Sea?	<b>Zhi Wan Tan</b> Indochinese freshwater crabs of the genus <i>Badistemon</i> : a brief “walk-through” of their taxonomy, with descriptions of new species from Thailand
12:00	<b>John McNamara</b> Evolutionary trade-offs in osmotic and ionic regulation and gill ion transporter gene expression in high latitude, cold climate Neotropical crabs from the ‘end-of-the-world’	<b>Svenja Halfer</b> Collecting deep-sea amphipods in sediment traps in the subantarctic Southern Ocean	<b>Ingo S. Wehrtmann</b> To eat and to be eaten: the role of freshwater crabs in aquatic food webs
12:15-13:15	Karakia & Lunch TCS Board meeting		
13:15-14:45	Symposium: Frontiers in Crustacean Biology: Asian Perspectives: Part III Chair: Jibom Jung Room: Oceania	Symposium: A Confusion of Crustaceans: Peracarida: Diversity and Collections Chair: Anne Helene Tandberg Room: Rangimarie 1	General Talks B: Bioinvasions Chair: Andrew Hosie Room: Rangimarie 2
13:15	<b>Akira Asakura</b> Recent development of Carcinological Society of Japan, with special emphasize of international activity	<b>Lauren Hughes</b> Amphipoda Type Catalogue of the Natural History Museum, London	<b>Chris Woods</b> The National Marine High Risk Site Surveillance programme: detecting incursions and range extensions of non-indigenous crustaceans in Aotearoa New Zealand
13:30	<b>Tadashi Kawai</b> Evolution of freshwater crayfish (Decapoda: Astacidea)	<b>Kelly Merrin</b> Cumacea and Tanaidacea Type Catalogue at the Natural History Museum London	<b>Tamara Frank</b> The Micronektonic Crustacean Assemblage in the Gulf of Mexico: Temporal Changes Since the Deepwater Horizon Oil Spill
13:45	<b>Taewon Kim</b> Creative application of crustacean evolution to new generational breakthrough: case studies of environmental assessment and biomimetics	<b>George Wilson</b> Phreatoicidean isopods: hidden diversity from the early Mesozoic	<b>Michal Ferries</b> Predation by invasive portunid crabs on functionally and culturally important bivalves in New Zealand
14:00	<b>Masafumi Kodama</b> History of taxonomic study of gammaridean amphipods in Japan	<b>Aleksandra Jakiel</b> Pseudotanaididae (Tanaidacea) diversity in North Atlantic	<b>Madeleine Hamame</b> Reproductive indicators of a small-scale crab fishery across a latitudinal gradient in the South-East Pacific
14:15	<b>Tomonori Sekioka</b> Both local environment and global biogeography affect a local amphipod community structure in Akkeshi Bay, northeastern Japan	<b>Rachael Peart</b> Amphipods of Aotearoa: what is, and was, and is to come	<b>Serena Keeler</b> Towards passive traps for marine pest species using novel acoustic methods
14:30	<b>Boyang Shi</b> Complex biogeographical history, introgression, and cryptic diversity of the three Chinese endemic freshwater crabs (Brachyura, Potamidae)		<b>Anjali Pande</b> The complexity of biosecurity in Aquaculture in New Zealand

14:45-15:15	Afternoon Tea		
15:15-16:45	Symposium: Frontiers in Crustacean Biology: Asian Perspectives: Part III Chair: Tadashi Kawai (cont'd) Room: Oceania	Symposium: A Confusion of Crustaceans: Peracarida: Diversity and Collections B Chair: Kelly Merrin Room: Rangimarie 1	General Talks C: Physiology and toxicology Chair: Orlando Lam-Gordillo Room: Rangimarie 2
15:15	<b>Yixiong Cai</b> Importance of nationally Red Listed species in biodiversity conservation: a case study of freshwater decapods in Singapore	<b>Kenneth Meland</b> New discoveries on geographical distribution of glacial relicts in the genus <i>Mysis</i> in southeast Norway	<b>Lars Pelikan</b> Small-scale population structuring results in differential susceptibility to pesticide exposure
15:30	<b>Kingsley Wong</b> Ecology of coral associated gall and pits crabs (Decapoda: Cryptochiridae): biodiversity and host usage in Hong Kong	<b>Sarah Gerken</b> Cumaceans: Contumacious No More	<b>Thomas Baxter</b> Consequences of heat spikes on crustacean burrowers and the communities they engineer
15:45	<b>Soobin Joo</b> The responses of crabs (Crustaceans) to anthropogenic vibrational and acoustic disturbance	<b>Anne-Nina Lörz</b> The IceDIVA post IceAGE, a project update focussing on peracarid crustaceans	<b>Valerio Zupo</b> Toxicogenetic effects of biodegradable polymers on two crustaceans: <i>Hippolyte inermis</i> and <i>Idotea baltica basteri</i>
16:00	<b>Jaehwan Seo</b> The carbon reduction through huge and complex burrow system of thalassinidean mud shrimp <i>Laomedida</i> nov. sp. (Crustacea: Laomedidae) from Korean intertidal	<b>Anne Helene S. Tandberg</b> Mysteries and myths about distribution, abundance and diversity of Peracarida	<b>Sharon Moscovitz</b> Monosex prawns and crayfish as biocontrol agents against pest snails
16:15	<b>Da Pan</b> Seasonal variation of the gut microbiota in the freshwater crab <i>Sinopotamon planum</i>		<b>Sherry Tamone</b> Ocean warming and acidification alter metabolic physiology and carbonic acid gene expression in juvenile Northern spot shrimp ( <i>Pandalus platyceros</i> ): Implications for resilience to climate change
16:30	<b>Jibom Jung</b> Crustacean microbiome research: past, present and future		
Break			
17:30-18:00	JCB editorial board meeting		

### DAY 3 – Wednesday, 24 May 2023

09:00	Housekeeping		
09:10-10:10	Keynote: <b>Alan Jamieson</b> (University of Western Australia) Hadal Crustacea from 6000m to 11,000m deep Chair: Andrew Hosie Room: Oceania		
10:10-10:45	Karakia & Morning Tea		
10:45-12:15	Symposium: Genomics Chair: Donald Mykles Room: Oceania	Symposium: A Confusion of Crustaceans: Peracarida: Deep Sea Chair: Rachael Peart Room: Rangimarie 1	General talks D: Big picture crustaceans Chair: Jose C. E. Mendoza Room: Rangimarie 2
10:45	<b>Don Mykles</b> In silico analysis using the CrusTome database identifies molt-inhibiting hormone receptor candidates	<b>Henry Knauber</b> Across Trench and Ridge: Differentiation Patterns of the deep-sea <i>Haploniscus belyaevi</i> Species Complex (Isopoda: Haploniscidae)	<b>Nasreen Peer</b> Drivers and impacts of brachyuran distribution in South African mangroves
11:00	<b>Anilkumar Gopinathan</b> Functional domains of ecdysteroid receptor gene of a field crab inhabiting Indian peninsula: Sequencing and phylogenetic analyses	<b>Stefanie Kaiser</b> Abyssal-hadal connections: Delving deep into benthic isopod diversity of the Aleutian Trench	<b>Adiel Klomp maker</b> Were decapod crustaceans affected by the Cretaceous-Paleogene mass extinction?
11:15	<b>Tomer Ventura</b> Closing gaps in reproduction and development of decapods using integrated omics approaches	<b>Inmaculada Frutos</b> Deep-sea suprabenthic peracarids from New Caledonia: exploring diversity in the Coral Sea (SW Pacific)	<b>Jose Christopher E. Mendoza</b> Quo vadis Xanthoidea? Translating molecular phylogeny into practical taxonomy
11:30	<b>Tom Levy</b> Androgenic gland in neo-male prawns lacking male chromosomes – where does it come from and how is it possible?	<b>Mizuki Ohta</b> Speciation along depths gradient in species complex of deep-sea asellotes (genus <i>Ilyarachna</i> ) around the Japan and the Kuril-Kamchatka Trench	<b>Nanami Yumura</b> A new insight into the evolutionary trend of the family Lernaepodidae (Copepoda: Siphonostomatoida) based on molecular data
11:45	<b>Heather Bracken-Grissom</b> A deep-sea game of hide and glow: Light organ function and diversification in sergestid shrimps		<b>Kareen Schnabel</b> Twenty years on: updating the inventory of New Zealand Crustacea

12:00-13:30	Karakia & Lunch + POSTER SESSION Poster presenters to stand by posters from 12.30pm		
13:30-14:45	Symposium: Genomics (continued) Chair: Donald Mykles Room: Oceania	Symposium: A Confusion of Crustaceans: Peracarida: Deep Sea (cont'd) Chair: Rachael Peart Room: Rangimarie 1	Symposium: Larval Diversity and Ecology Chair: Jason Williams Room: Rangimarie 2
13:30	<b>Pedro Peres</b> Large-scale connectivity of the deep-sea shrimp <i>Systellaspis debilis</i> (Decapoda, Caridea, Opolophoridae)	<b>Johanna Weston</b> The hadal zone is a series of inverted islands: Evidence from global population genomics of a cosmopolitan amphipod	<b>Jason Williams</b> Recognition of a novel epicaridium larval external yolk sac in primitive bopyrids (Isopoda: Bopyridae) parasitizing deep water squat lobsters
13:45	<b>Lauren Ballou</b> Meiuran evolution in light of genomic applications	<b>Shamik Dasgupta</b> Predator-prey relationship of snailfish and amphipods in deepest known hadal whale fall events	<b>Christopher Boyko</b> To cut a long-armed story short: cryptic diversity in endoparasitic isopods from mud crabs along the US Atlantic coast revealed by molecular and larval characters
14:00	<b>Jonathan Molcho</b> On genome editing in embryos and cells of the freshwater prawn <i>Macrobrachium rosenbergii</i>	<b>Anne Helene S. Tandberg</b> Assessing the diversity of amphipods associated with non-crustacean zooplankton in Norway: the ParaZoo project	<b>Benny K.K. Chan</b> How phylogenetic disparately related coral associated barnacles starting their symbiotic life with their hosts? – An example of adaptive evolution
14:15	<b>Hanin Wattad</b> CRISPR editing analysis in <i>Macrobrachium rosenbergii</i> genome: characterizing single nucleotide polymorphism and repetitive sequences	<b>Edwin Cruz-Rivera</b> Assessing symbiosis using observational data: Crustacean symbiont diversity and spatial variability in an ascidian host	<b>Yu-Hsuan Chen</b> Environmental Factors in Affecting the Infestation and the Larval Sex Ratio of the Rhizocephalan Barnacle <i>Polyascus planus</i>
14:30	<b>N. Dean Pentcheff</b> Environmental DNA metabarcoding: Migrating research to management		
14:45-15:15	Afternoon Tea		
15:15-16:45	Symposium Chelicerates Chair: John Fornshell Room: Oceania	Symposium: A Confusion of Crustaceans: Peracarida: Phylogeny Chair: Kelly Merrin Room: Rangimarie 1	Symposium: Larval Diversity and Ecology (cont'd) Chair: Jason Williams Room: Rangimarie 2
15:15	<b>John Fornshell</b> Research on sea spiders (Chelicerata; Pycnogonida) in the era of single ship oceanographic voyages (1870-1915)	<b>Keith Crandall</b> Major revisions in pancrustacean phylogeny through improved taxon sampling with recommendations for resolving remaining difficult nodes	<b>Miguel Estrada Caballero</b> Long-term climate events affecting the larval distribution of the invasive Chinese mitten crab, <i>Eriocheir sinensis</i> , in the San Francisco Bay Delta
15:30	<b>Anis Syahira Abdul Halim</b> Identifying the sediment size preference of coastal horseshoe crab, <i>Tachypleus gigas</i> spawning	<b>Kevin Kocot</b> Toward resolving the phylogeny of Peracarida using a phylogenomic approach	<b>Keshet Shavit</b> A Crystalline Photonic Device Enabling Crustaceans to See But Not be Seen
15:45	<b>Faridah Mohamad</b> High mortality of horseshoe crabs <i>T. gigas</i> (Arthropoda, Merostomata, Tachypleinae) larvae and juveniles in lab-rearing facility	<b>Emma Palacios Theil</b> Molecular phylogeography of the benthic deep-sea family Neotanaididae reveals cases of relatively high dispersal abilities and wide depth ranges	<b>Jan Philipp Geißel</b> Adapted to the cold? Larval thermal tolerance across the native range in the European shore crab <i>Carcinus maenas</i>
16:00	<b>Andrew Hosie</b> Exploring the origins of sponge symbiosis within the Balanoidea and the phylogenetic placement of the Acastinae	<b>Marta Gellert</b> Phylogeny relationship and diversity of deep-sea crustaceans from the family Typhlotanaididae Sieg, 1984 (Tanaidacea: Crustacea) and new families: Hamatipedidae, Meromonakanthidae and Paratyphlotanaididae.	<b>Noé Espinosa-Novo</b> A comparative study of the combined effects of temperature and salinity on performance of larvae of the invasive <i>Hemigrapsus sanguineus</i> and the native <i>Carcinus maenas</i>
16:15	General Session Chair: John Fornshell	<b>Werner De Gier</b> Ecomorphological aspects in the evolution of endosymbiotic crabs and shrimps	<b>Rita F. T. Pires</b> Strangers of the deep: integrative taxonomy towards the unravelling of the decapodid stage of the deep-sea shrimp <i>Benthesicymus laciniatus</i> Rathbun, 1906
16:30	<b>Hiromi Watanabe</b> Rediscovery of the enigmatic worm-parasite barnacle <i>Rhizolepas</i> reveals its surprising phylogenetic position in Poecilasmatidae (superfamily Lepadoidea)		

## DAY 4 – Thursday, 25 May 2023

08:55	Housekeeping	
09:00-10:30	<b>Workshop:</b> Incorporating (crustacean) fossils into phylogenetics and comparative methods Led by: Jo Wolfe, Ph.D. (Harvard University) Room: Oceania	<b>Workshop:</b> Scientific Writing Led by: Peter Castro (Journal of Crustacean Biology) Room: Rangimarie 1
10:30-11:00	Morning Tea	
11:00-12:30	Symposium: Sexual plasticity in Crustaceans Chair: Tom Levy Room: Oceania	General Talks E: Decapod complexity Chair: Kareen Schnabel Room: Rangimarie 1
11:00	<b>Amir Sagi</b> Intro to crustacean sexual plasticity symposium – the case of the IAG gender switch	<b>Paula Carolina Rodríguez Flores</b> Phylogeographic patterns of cosmopolitan species versus vicariant species in abyssal squat lobsters with insights into speciation and dispersal in the deep sea
11:15	<b>Tom Levy</b> <i>Pandalus platyceros</i> – a protandric shrimp as a model to explore the IAG-switch and crustacean sexual plasticity	<b>Thomas Botha</b> Additions and revisions to the squat lobster fauna (Anomura: Chirostyloidea and Galatheoidea) of South Africa
11:30	<b>Valerio Zupo</b> The sexual biology of the hermaphroditic shrimp <i>Hippolyte inermis</i> Leach – a transcriptomic approach following seasonal physiological changes	<b>Shivam Tiwari</b> Diversity and distribution of chirostyloid and galatheoid squat lobsters in the Indian waters, with a note on their parasites
11:45	<b>Emily Chen</b> Abnormal or the new normal? Assessing the degree of intersexuality in pelagic ostracods from the Arctic and Southern Oceans	<b>Lydia Gan</b> Molecular taxonomy of the <i>Macrobrachium pilimanus</i> species complex in the southern Malay Peninsula
12:00	<b>Eliahu D. Aflalo</b> Intersexuality could give rise to all female offspring in the red claw crayfish <i>Cherax quadricarinatus</i>	<b>Gary Poore</b> <i>Axius</i> is not an "axiid" – new insights into the phylogeny and classification of axiidean shrimps
12:15	<b>Ai Hang Tran Nguyen</b> A draft male genome and a refined pathway for sexual manipulation of the ornate spiny lobster <i>Panulirus ornatus</i>	
12:30-13:30	Karakia & Lunch	
13:30-14:00	<b>TCS business meeting</b> Room: Oceania	
14:00-15:00	Symposium: Sexual plasticity in Crustaceans (continued) Chair: Chris Tudge Room: Oceania	General Talks F: Crustaceans and the environment Chair: Kareen Schnabel Room: Rangimarie 1
14:00	<b>Diana Kortchemny</b> Breaking the assumption in sexual biology models in barnacles – movement, growth and sex change of dwarf males of the androdioecious turtle barnacle <i>Chelonibia testudinaria</i>	<b>Ali Abdulhussain</b> The Influence of the Toxin Producing Dinoflagellate, <i>Alexandrium catenella</i> (1119/27), on the Feeding and Survival of the Marine Copepod, <i>Acartia tonsa</i>
14:15	<b>Melody Wahl</b> Male sexually biased expression of W- and Z-associated cytochrome P450-like gene in early sexual differentiation of the prawn <i>Macrobrachium rosenbergii</i>	<b>Nishita Lal</b> Binding efficiencies of ecdysteroid receptor (EcR) with 20-hydroxyecdysterone and Ponasterone A: a comparative study with 14 brachyuran species
14:30	<b>Tomer Ventura</b> Improving ovarian maturation and spawning in the white shrimp, <i>Litopenaeus vannamei</i> , using serotonin and spiperone; a step toward the detection of ovarian inducing pheromones	<b>Wave Moretto</b> The effect of temperature on the feeding ecology of brown box crabs
14:45	<b>Susan Glendinning</b> Peptide hormone expression and synthesis in the reproductive tissues of the Ornate spiny lobster, <i>Panulirus ornatus</i>	<b>Ritindra Bhaduri</b> Microplastics ingestion by the Pacific mole crab <i>Emerita analoga</i> from Monterey Bay, California, U.S.A.
15:00-15:05	Move between rooms	
15:05 -16:00	Conference Closing/Poroporoaki TCSera + Student Awards + Next Congress announcement Chair: Kareen Schnabel & Rachael Peart	
Break		
19:30-23:45	<b>Conference Dinner</b> (Signs of a Nation, Te Papa)	
We are delighted to bring you a festival style evening, set in Te Papa's Signs of a Nation and surrounding environment. Drinks will greet you on arrival while you orient yourself to this incredible space. A special menu has been created by Te Papa chefs to showcase New Zealand's kai moana (seafood) as well as other locally sourced cuisine. There'll be a seating area for those who want to settle in around a table for an evening of conversation with old and new friends and plenty of space and bar leaners for those who prefer to mix and mingle. View the giant glass replica of the Treaty of Waitangi in this unique setting then get your dancing shoes on for a band made up of local scientists later in the evening. If you prefer to carry on a conversation or sit it out and watch, you can do just that over a drink or coffee.		

## POST-EVENT – Friday, 26 May 2023

Various times

Field Trips & Collection Tours  
See the event website for details

### POSTERS

01	Beermann, Jan	Spatial distribution of amphipod assemblages in Marine Protected Areas of the German Bight (North Sea)
02	Bližňáková, Anna	Morphological vs molecular approaches in conception of the genus <i>Parathranites</i> (Crustacea, Decapoda, Portunoidea, Carcinidae)
03	Casabon, Anchita	Integrating the Geometric Morphometrics Toolkit into the Taxonomy of Deep-Sea Macrostyliid Isopods
04	Chatterji, Ruma	Eye movement reflexes establish the home direction in path integrating fiddler crabs, <i>Uca pugilator</i>
05	Costa, Rogerio Caetano	Early stage in the life history of shrimps of the genus <i>Alpheus</i> : description of larval morphology as the first step to meroplankton studies
06	Perroca, Julia	The influence of environmental and ocean-climatic drivers in the abundance of shrimps in a shallow marine area
07	Davenport-Thomas, Luca	Microplastic ingestion by rafting Gooseneck barnacles in the South Pacific Ocean
08	Fišarová, Karolína	Molecular taxonomy of the Mediterranean–eastern Atlantic <i>Periclimenes</i> species: how many species does the group truly count?
09	Gan, Zhibin	Phylogeny and adaptative evolution to chemosynthetic habitat in barnacle (Cirripedia: Thoracica) revealed by mitogenomes
10	Geburzi, Jonas	For the shallows and the depths – A first probe set to target ultraconserved elements (UCEs) for Malacostraca
11	Jakiel, Aleksandra	Where no man has gone before - the first insight into the mitogenomes of deep-sea crustaceans of the family Pseudotanaidae (Tanaidacea, Peracarida)
12	Julius, Joy	Convergent Evolution of Carcinization Using 3D Morphometrics
13	Katayama, Aoi	Annual and lunar breeding rhythmicity in the acorn barnacle <i>Tetraclita kuro시오ensis</i> Chan, Tsang & Chu, 2007 in Okinawa, Japan
14	Knauber, Henry	Senckenberg Ocean Species Alliance (SOSA) – a project to facilitate discovery, conservation and fascination
15	Landschoff, Jannes	Re-discovering <i>Cancellus macrothrix</i> Stebbing, 1924 in the Great African Seaforest: Taxonomic re-description and biological notes
16	Liu, Xinming	Study on the taxonomy and phylogeny of the Anomura from the South China sea coast
17	López Díaz, Sandra	Characterization of mole crabs (crustacea, anomura, hippoidea) from the Pacific and Caribbean coasts of Costa Rica
18	Mantelatto, Fernando	Integrative analyses to resolve the taxonomic identity of cryptic species: the case of mole crabs of the genus <i>Emerita</i> (Anomura) from the Western Atlantic
19	Mantelatto, Fernando	Molecular systematics revealing species complexes in neotropical freshwater crabs: a case study with <i>Dilocarcinus</i> H. Milne Edwards, 1853
20	Moretti, Paula	Delimitation of <i>Ptilohyale littoralis</i> Stimpson, 1853 (Amphipoda, Hyalidae)
21	Moretti, Paula	Population dynamics of a potentially invasive hyalid ( <i>Ptilohyale littoralis</i> Stimpson, 1853) compared to a local dominant species ( <i>Parhyale hawaiiensis</i> , Dana, 1853)
22	Okamoto, Kai	Species Diversity and Biogeography of Deep-sea Cumaceans in the Northwest Pacific.
23	Pardo, Luis Miguel	Paternity patterns associated with sperm receptive structures in decapods
24	Pearl, Rachael	Crustaceans on the move: the continuing story of biofouling communities on tsunami detection buoys
25	Rodríguez Flores, Paula Carolina	Historical biogeography of squat lobsters in the family Eumunidae (Chirostyloidea) helps to unveil the role of marine hotspots and geographic barriers in deep-sea diversification
26	Santamaria, Carlos A	Comparison of the the mitochondrial genome of four <i>Ligia</i> isopods assembled using genome skimming approaches
27	Siqueira, Silvana	Amphipods from the island where the bubbles sink: first assessment of macroalgae associated fauna in Saint Peter and Saint Paul Archipelago
28	Siqueira, Silvana	Like two peas in a pod: unexpected low genetic diversity of commensal amphipods on western Atlantic sea turtles
29	Siqueira, Silvana	These fronds are made for raftin': comparative phylogeography of Peracarida associated with brown algae in the Western Atlantic
30	Sudarshan, Gurucharan	Analysis of embryonic prawn primary cell culture by metabolic activity, cell cycle analysis and lipid metabolomics

31	Toh, Elysia XP	All is not lost: ex-situ and in-situ studies reveal resilience to drought stress in the critically endangered Singapore freshwater crab <i>Johora singaporensis</i>
32	Vandersommen, Victoria	Cumacean biodiversity of the circum-Antarctic: the unsung crustacean buffet
33	Ventura, Tomer	Transcriptomic Analysis and Time to Hatch Visual Prediction of Embryo Development in the Ornate Spiny Lobster ( <i>Panulirus ornatus</i> )
34	Ventura, Tomer	Developing mono-sex technology in red claw crayfish <i>Cherax quadricarinatus</i>
35	Weston, Johanna	From description to transcriptome: The journey of <i>Eurythenes atacamensis</i> (Amphipoda) to improve understanding of eco-evolutionary dynamics in the hadal zone
36	Wetzer, Regina	Unraveling the social and genetic structure of <i>Paracerceis</i> sp., a Puerto Rican sphaeromatid isopod associated with the giant barrel sponge <i>Xestospongia muta</i>
37	Li, Xinzheng	Phylogenetic and Phylogenomic Analyses Reveal Surprises and New Insights into Taxonomy and Evolution of Axiidea (Crustacea: Decapoda)
38	Yamamoto, Daiki	The assemblages of deep-sea amphipods off the northeastern coast of Japan, Northwest Pacific Ocean
39	Zara, Fernando	Mapping of morphological characters of spermatophores and spermatozoa of spider crabs <i>Libinia</i> Leach, 1815 (Majoidea, Epialtidae) in a phylogenetic context
40	Zara, Fernando	Comparative spermatophore and spermatozoa ultrastructure in an Heterotremata clade (Brachyura): The evolution of characters and their phylogenetic placement
41	Zara, Fernando	Spermatozoa ultrastructure in Varunidae crabs (Thoracotremata)

# Letter from Convenors



**Kia ora, welcome!**

On behalf of the organising committee, we are excited to welcome you to Aotearoa New Zealand and the 10th International Crustacean Congress. This is the first time for many years that many of us will be able to see each other face-to-face again and it is the first crustacean meeting to be held in our small southwest Pacific nation. Our delegates represent all major continents and a broad range of disciplines and taxa and we look forward to seeing lively discussions and lots of laughter. Alongside connecting with other delegates, we hope you will be able to investigate the small crustacean exhibition on display downstairs in Te Taiao | Nature, and we hope you have a chance to explore our beautiful windy city beyond Te Papa. Wellington offers a diverse range of coffee and craft beers – and don't forget to vote in our crustiest beer competition. Thank you for joining us and we hope you enjoy the proceedings and our 'coolest little capital of the world'.

Enjoy your stay – kia pai to noho.



**2021** United Nations Decade  
**2030** of Ocean Science  
for Sustainable Development



The Crustacean Society



## **Local Organising Committee**

Rachael Peart (NIWA, co-convenor)

Karen Schnabel (NIWA, co-convenor)

Shane Ahyong (Australian Museum)

Joanne Taylor (Museums Victoria)

Andrew Hosie (Western Australian Museum)

Diana Macpherson (NIWA)

Mark Fenwick (NIWA)

Kelly Merrin (Monash University)

Rick Webber (National Museum of New Zealand  
Te Papa Tongarewa)

# General Information

## Congress & Dinner Venue (22-26 May 2023; Dinner on Thursday 25 May @7.30pm)

Museum of New Zealand Te Papa Tongarewa  
55 Cable Street  
Te Aro, Wellington

## Informal Meet & Greet Venue (Sunday 21 May 2023, 5.30-7.30pm)

Mac's Brew Bar  
4 Taranaki Street  
Te Aro, Wellington

## Registration & Information Desk

To check in, pick up your name badge and for any assistance, please see the registration desk located in Oceania Room, Level 3, Te Papa. It will be open throughout the congress for enquiries, accounts payment and messages. To contact the onsite team:

Kerry South - 021 024 77554  
Beatrice Giorgi - 027 364 7982  
Jaimini Patel - 022 352 1607

## Co-Host Societies

The ICC 10 Congress is co-hosted by The Crustacean Society and the International Society of Invertebrate Reproduction and Development (ISIRD).

The Crustacean Society Website:

<http://www.thecrustaceansociety.org/>

International Society of Invertebrate Reproduction and Development (ISIRD)

Website: <http://www.isird.org/>



## Internet Access

The following free Wi-Fi is available for use at the Te Papa Tongarewa Museum.  
Network: Tākina Events  
Password: events

## Event App

Have you got the event app? Instructions to download and log-in are at the back of your Name Badge! Come and see us at the registration desk if you need help and we'll get you set up. Kindly supported by



## Parking

Parking is available at the Te Papa car park. You can pay with cash, EFTPOS, or credit card (Amex, Mastercard, or Visa). All fees go towards supporting the museum.

### Daytime, 8am – 5pm

\$4 per hour, up to a maximum of \$30

### Evening and overnight

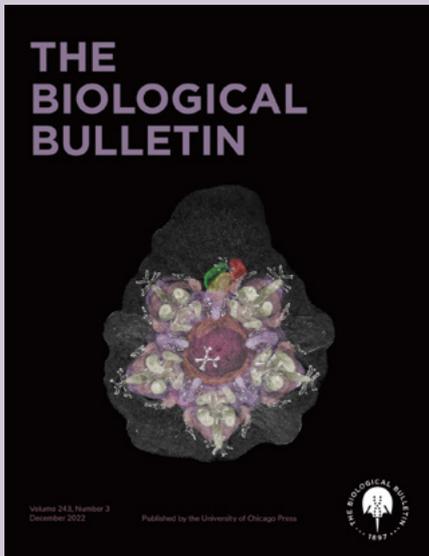
5pm – 8am: \$2 per hour (up to \$8 when exiting before 2am, or up to \$24 before 8am)

24-hour maximum: \$40

### Lost ticket fee: \$40

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### Clamping fee: \$60



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# Keynotes



## Dr. Tara McAllister

Tara is a Māori scientist, interdisciplinary scholar and a mother belonging to the iwi (tribes) of Te Aitanga a Māhaki and Ngāti Porou, with expertise spanning from freshwater ecology to racism in the tertiary sector. Her research has sought to address the underrepresentation of Indigenous scholars in academia and has resulted in changes to policy and practise within the tertiary sector in New Zealand. She earned a Bachelor of Science in ecology and biodiversity and marine biology from the Victoria University of Wellington and a PhD in water resource management from the University of Canterbury.

### **Moving towards re(Indigenising) science: actions for change**

Dr McAllister will weave her expertise and experience as a Māori scientist and her research into inequities in higher education to discuss re(Indigenising) science. She will explore why re(Indigenising) science is important and draw on examples from Aotearoa of how dominant science has caused harm to Indigenous people. She will discuss the inclusion of Indigenous people and knowledge in science and highlight why to create a better future in science we must go beyond simply including Indigenous people in science.

Monday 22 May, 11.30am-12.30pm



# Keynotes



## Prof. Megan Porter

Megan is a Professor in the School of Life Sciences at the University of Hawai'i at Mānoa. After completing an M.S. degree at the University of Cincinnati in Ohio, a Ph.D. at Brigham Young University in Utah, a postdoc at the University of Maryland Baltimore County, and several years as an Assistant Professor at the University of South Dakota, she joined the faculty at the University of Hawai'i in 2015. She is a visual ecologist and evolutionary biologist who studies the way animals see the world. Her research aspects of vision in a range of crustaceans including decapods, copepods, and stomatopods. As a researcher of animal vision, Megan is especially interested in the intersection between science and art, and how understanding the visual systems of other animals alter our own perception of the world.

### **The evolution of crustacean visual systems: themes, challenges, and remaining mysteries**

The Crustacea have evolved an amazing array of visual systems, exhibiting a multitude of eye types, optical designs, structures specialized for color and polarization vision, and molecules involved in detecting light. This diversity is compounded by the often distinct eyes found in larval versus adult forms. Yet, knowledge of visual systems is still lacking, particularly with respect to integrating information across biological levels (e.g. molecules, morphology, physiology, behavior) within an evolutionary context. As a first step towards an integrated view of crustacean visual system evolution, we identified the complement of expressed opsin genes, coding for the protein component of light sensitive visual pigments, from 95 species representing 32 orders of crustaceans. Interesting patterns include the retention of opsins from the long wavelength sensitive clade in several orders that have lost eyes (i.e. Mystacocaridida, Podocopida, Nectiopoda, Brachypoda); a clade of putative middle-wavelength sensitive opsins found only within thecostracans; and many species expressing more opsins than predicted based on characterized photoreceptor spectral diversity, with the most extreme example found in stomatopods that express over 30 opsins in a single retina. Building on this foundation, crustacean eyes also exhibit an extreme diversity in eye types, but the link between photoreceptor diversity and opsin diversity is still poorly understood. In situ hybridization studies in stomatopod retinas demonstrate the potential for complex and unexpected patterns of opsin expression and co-expression within spectrally distinct photoreceptors. The convoluted relationship between opsin diversity and photoreceptor diversity extends to even the simplest crustacean eyes. To unravel these remaining mysteries, studies linking opsin expression patterns within photoreceptors to physiology, and physiology to behavior, are needed across the ecological and taxonomic diversity within the Crustacea.

Tuesday 23 May, 9.30-10.30am



# Keynotes



## Prof. Alan Jamieson

Professor Alan Jamieson is the director of the Munderoo-UWA Deep-Sea Research Centre at the University of Western Australia. His research is centred around the study of the deepest ecosystem in the oceans: the hadal trenches. He has worked in the deep-sea for over 20 years, published over 110 scientific papers, has been involved in over 70 deep-sea expeditions. He has conducted research in every one of the world's oceans and more recently has undertaken 16 submersible dives of which over half have exceeded 6000m in depth. Using often very bespoke exploration technology, his most studied taxonomic groups are the fishes, and the crustacean orders of Amphipoda and Decapoda.

### Hadal Crustacea from 6000m to 11,000m deep

Since the first scientific expeditions to the deepest ocean trenches, Crustacea have been known to be a dominant hadal group particularly the amphipoda. Amphipods, common to all trenches studied so far, are a conspicuous and significant scavenging group on which many scientific studies at hadal depths have been based. Conversely, until the mid-2000s, decapods were thought to be one of the few deep-sea crustacean groups that had no hadal representatives at all, but this is no longer the case. Decapods, in particular, penaeoids are also common to all known trenches but are restricted to depth of ~7800m. The last 15 years has seen a renaissance in hadal trench exploration, and the Amphipoda and Decapoda have featured heavily in these contemporary studies. This presentation will document the biodiversity and biogeography of these crustaceans across 16 trenches and the adjoining abyssal plains. It will also showcase some of the latest in situ observations of some key species and their inter-species interactions, including the supergiant amphipod *Alicella gigantea*.

Wednesday 24 May, 9.10-10.10am



Photo Credit: Ian Skipworth



# Symposia

## **A Confusion of Crustaceans: Peracarida**

The superorder Peracarida contains about 26,000 described species distributed in one fossil and 12 extant orders, representing 39% of all non-hexapod crustacean diversity. Peracarids are found in all environments, from terrestrial deserts to the depths of ocean trenches. They reach staggering diversity on land, in shallow-water tropical reefs, and in the Polar Oceans. The majority are marine, some exist only in groundwater or cave-waters, others live in freshwater and still others persist in hot springs at temperatures up to 40°C. Most are small, less than 1 cm long, although the largest reach 40 cm. The uniting characteristics of the group are that the young develop directly in a brood pouch on the female, and the presence of a lacinia mobilis. Dispersal in the group is dependent on swimming ability and passive means of transport such as rafting, rather than broad dispersal being a common part of the lifecycle through large scale larval transport. Most peracarids are free-living, but lifestyles found within the group include epibionts, commensals, obligatory parasites and even hyperparasites of other crustacean parasites. The proposed symposium will focus on broader aspects of peracarid biology. We aim to convene a broad diversity of peracarid scientists to explore all aspects of this exciting group of creatures and encourage abstracts from all disciplines.

Led by: Sarah Gerken (University of Alaska, Anchorage)

## **Crustacean Evolutionary Physiology**

This symposium will focus on the evolutionary physiology of the Crustacea, notably on osmotic and ionic regulation and metabolic, excretory and developmental physiology as driven by marine-freshwater transitions, and organismal, structural, biochemical and molecular adaptations to extant habitats. We begin by evaluating methodologies for establishing phylogenetic hypotheses and then examine procedures to map physiological characteristics onto such phylogenies, to estimate ancestral traits, to test adaptive hypotheses and to evaluate co-evolutionary processes. Speakers will then elaborate on specific topics and taxa that examine the principles of evolutionary physiology as illustrated by ion transport and metabolic and excretory mechanisms, use of molecular methods and markers, gene and protein expressions and pertinent comparative methodologies. Such issues, when integrated at different levels of structural organization, will disclose the mechanisms that have governed the patterns and processes of physiological evolution in extant crustaceans.

Led by: John McNamara (Universidade de São Paulo) & Samuel Faria (Universidade de São Paulo)

## **Crustacean Genomics**

Applying state of the art sequencing technologies enables refined phylogenetic analyses, has many ecological applications including detection of endangered and invasive species through eDNA, and leads to a better understanding of gene functions, bridging the gap in our understanding of the intricate processes that translate the genome to phenome. Many researchers nowadays generate massive databases of RNA and DNA sequencing, although our understanding of gene functions lag behind. A uniform approach towards genome sequencing which is a grand challenge for crustaceans, as well as annotation procedures and access to these large databases by the general research community is warranted.

Led by: Donald Mykles (Colorado State University)

## **Crustacean Larval Diversity and Ecology**

Crustaceans exhibit an amazing amount of diversity in their larval forms, an aspect of their biology that is responsible, at least in part, for their evolutionary success. Although all crustaceans exhibit a nauplius stage (not all of which are released as free larvae), development to adulthood for many groups includes several additional unique larval types. Some life cycles of crustaceans include gradual larval changes (anamorphic) whereas others exhibit abrupt changes (metamorphosis) including multiple larval types and transitions in habitat or host. Those taxa with metamorphosis include commercially (e.g., portunid crabs) and ecologically (e.g., parasites) important groups. The larvae of some taxa have been well documented, whereas many others remain understudied or have unknown relationships with adult forms (e.g., facetotectans). This symposium will focus on the diversity of crustacean larvae (widely conceived in terms of morphology, phylogenetic relationships, and biogeography) as well as their ecology and key roles in planktonic communities. In addition, aspects of larval development will be explored, including studies on crustaceans of importance in aquaculture and sustainable fisheries. We hope these discussions fill in gaps on the natural history of crustacean larvae and inspire new studies to more fully understand these critical life cycle stages.

Led by: Jason Williams (Hofstra University)

## **Frontiers in Crustacean Biology: Asian Perspectives: Part III**

Studies of crustacean biology in Asia have remarkably expanded in the last decade. To promote interaction among carcinologists who have contributed to this development, Biology: Asian Perspectives was held in Tokyo, Japan in 2017, and Frontiers in Crustacean Biology: Asian Perspectives: Part II was held in Hong Kong in 2019. Unfortunately, the offline symposium was stopped after mid-year 2019 because of the COVID outbreak. To resume the encouragement of the study of crustacean biology in Asia with Asian-related fields, Frontiers in Crustacean Biology: Asian Perspectives: will continue as a symposium in ICC-10. The first speaker, A. Asakura of Japan, will introduce the history of this symposium, and then crustacean biology research in Asia will be presented by M. Kodama of Japan, K.K. Chan of Taiwan, T. Kawai of Japan, and J. Jung of Korea, with additionally joined speakers. The symposium invites, particularly early career TCS members in Asia. The advanced and recent fields of crustacean biology, systematics, conservation, ecology, physiology, morphology, and others in Asia with Asian-related areas are the main topics. The proceedings publication book of this symposium may appear in as the Advances in Crustacean Research series from CRC Press and Taylor & Francis Group, Series Editor: Ingo S. Wehrtmann. If you have the interest to join the symposium, contact the organizer of the symposium.

Led by: Tadashi Kawai (Hokkaido Research Organization) & Jibom Jung (Ewha Womans University)

## **Marine Chelicerates**

The symposium would be open to all aspects of the biology of the Pycnogonida and Xiphosura both extant and the fossil record. While these animals are not crustaceans, their biology is closely related to the crustaceans.

Led by: John Fornshell (U.S. National Museum of Natural History)



# Symposia

## **Sexual Plasticity in Crustaceans**

Crustaceans, of the most ancient arthropod groups in which sexual differentiation has been studied, exhibit a variety of reproductive strategies including gonochorism, hermaphroditism, intersexuality and even parthenogenesis and thus serving as excellent models to study sexual plasticity.

This hyper diverse group which contains over 65,000 species is inhabiting most aquatic niches and serving vital roles in the maintenance of the ecosystem's health. They also serve as indicators for endocrine disruptors in polluted aquatic areas affecting sexual differentiation inflicting sexual bias in population structures. Moreover, since many species show sexually biased dimorphic growth patterns, the notable sexual plasticity of crustaceans often calls for the establishment of monosex aquaculture and mariculture biotechnologies. Therefore, in an era characterized by climate change and increased pollution which affects the stability of aquatic habitats, the field of sexual plasticity in crustaceans is of global interest at both ecological and food security aspects.

This symposium serves to communicate novel research that emphasizes the mechanism of sexual plasticity in crustaceans. Topics include life history studies, reproductive physiology, sexual differentiation, intersexuality, hermaphroditism, species conservation, population ecology and sex-manipulation-based biotechnologies for aquaculture, mariculture, and biocontrol. Other studies will be considered if they show direct relevance to sexual plasticity in crustaceans at the broad sense.

Led by: Tom Levy (Stanford University) & Christopher Tudge (American University)

## **Science informs management of lobster in challenging times**

We invite papers that share insights on how science informs the management of commercial and non-commercial fisheries for lobsters (and crustaceans more broadly). How can science inform management of stocks and the assessment of sustainable yield? Can we improve our knowledge of some of the key biological characteristics of lobsters including size at onset of maturity, fecundity, growth, aging, ontogenetic movement, natural mortality or their interaction with fishing such as vulnerability to potting (catchability)? What is the potential for culture of lobsters, including approaches that intercept the larval process and on-grow from larval or juvenile stages? Can growth to market size be accelerated; can shell colour and morphology be manipulated to suit market preferences? What more can we learn about the interactions between lobsters and fishing and the habitats they live in and changes in the marine environment, including those influenced by climate change? Necrosis and shell conditions – what are the natural 'triggers' – are successful treatments possible?

Led by: Mark Edwards (NZ Rock Lobster Industry Council)



# Symposia



## **Sharing the Data: reflections on building and maintaining a global alliance of data information systems**

We invite our colleagues to share insights into the biogeography and distribution of crustaceans from around the world and all habitats. In a changing world, with increased evidence of modified horizontal and vertical distribution ranges, it is ever more important to capture geographic information. We encourage a discussion on data management and sharing that enable broad analyses of species range changes, responses to climate change.

Led by: Kevin Mackay (Ocean Biodiversity Information System (OBIS) & Global Biodiversity Information Facility (GBIF), NIWA)



## **UN Decade of Ocean Science for Sustainable Development : crustaceans helping us work together**

Declared in 2019, the UN Decade of Ocean Science for Sustainable Development (2021–2030) promotes transformative multidisciplinary solutions to implement Sustainable Development Goal 14 – Life Below Water. Central to the Decade work programme is the creation of a new foundations across the science sector and communities to better manage the oceans. It is designed to increase mobilisation and activity across the ocean sector to support new, collaborative he partnerships and multidisciplinary solutions towards transformative ocean science.

The NZ National Commission for UNESCO is responsible for leading Aotearoa New Zealand's contribution to the Decade. Central to the National Commission's Decade work is a multi-disciplinary approach that places indigenous knowledges (mātauranga Māori in Aotearoa NZ) at the core of our approach. Weaving knowledge systems together has generated a distinctive approach to undertaking science and research and how we collaborate with one another. Collaborating with indigenous researchers recognises the values of living rivers, coastlines and marine ecosystems including the contribution of blue economy. This special session will introduce provide different perspectives on our approach and also encourages wider research projects to present local or regional perspectives on how carcinology and ocean research connect with indigenous knowledge.

Led by: Silke Bieda (Advisor NZ National Commission for UNESCO)



2021 United Nations Decade  
2030 of Ocean Science  
for Sustainable Development



# Workshops

## **Workshop: Incorporating (crustacean) fossils into phylogenetics and comparative methods**

Crustacean evolution is central to many debates about the shape of past and present diversity and disparity, ecological change, and rates of evolution. Most of this research has been implemented on molecular and fossil data separately, or with only shallow level integration. Yet, the importance of fossils in macroevolutionary study is underscored by recent theoretical papers indicating failure of model fit when extinction is excluded (e.g. Louca & Pennell 2020, Nature).

Topics:

We will discuss the decisions that go into incorporating fossils into macroevolutionary analyses, such as:

- Inferring the phylogenetic positions of fossils
- Time calibrating phylogenies
- Mapping traits onto phylogenies
- Inferring rates of diversification through time

Through these, we will introduce several cutting edge approaches developed during our current research on the evolution of crabs. While a basic understanding of phylogenetics is expected, we will introduce Bayesian thinking as is needed.

This teaching workshop with collaborative learning will take place over ~4 hours.

All career stages are welcome.

Led by: Jo Wolfe, Ph.D. (Harvard University)

Thursday 25 May, 9.00-10.30am

## **Workshop: Scientific Writing**

The workshop aims to outline and present solutions to some of the most important and common pitfalls and difficulties in the preparation of scientific manuscripts written in the English language.

Led by: Peter Castro, Editor-in-Chief (Journal of Crustacean Biology)

Thursday 25 May, 9.00-10.30am

# Social Functions



## The Crustacean Beer Congress

When: 20 May, 12.00 pm till late

Where: The Malthouse (76 Willis Street)

Free Entry

The 10th International Crustacean Congress is coming to Wellington and it turns out that Crustacean Scientists love beer.

To show off Wellington's incredible beer scene to visiting carcinologists, a few of the 'crabital's' best breweries will be competing to create 'cray-zy' crustacean-inspired beers. 'Clam-ber' down to the Malthouse to cast a vote for your favourite.

One brewery will win the ultimate bragging rights: an as yet-unnamed crustacean will be named after them! Delegates will get the chance to vote on their favourite beer during the Welcome Reception (see more info below).

## Informal Meet & Greet

When: Sunday 21 May 2023, 5.30-7.30pm

Where: Mac's Brew Bar - 4 Taranaki Street

No need to sign up. This is an informal gathering point for ICC delegates and friends to gather and enjoy a catch up prior to the congress start. No formal programme or no congress check-in planned. Just a time to connect and enjoy a relaxing evening. Invite a friend, bring a partner. Food and beverage at your own expense. Enjoy!

## Welcome Reception

When: Monday 22 May 2023, 4.45-6.45pm

Where: Oceania Room, Te Papa

We're excited to share that, since the Wellington on a Plate beer competition was 'spawned' from ICC10, delegates will get their very own chance to taste and to vote on their favourite beer during the Welcome Reception. This reception follows the conclusion of presentations on day one, giving everyone a chance to unwind and socialise. Local iwi will share a kapa haka with guests and there will be canapes and beverages on hand to enjoy. A kapa haka is a group performing traditional Māori dances.

## Congress Dinner

When: Thursday 25 May 2023, 7.30-11.30pm

Where: Signs of a Nation Room, Te Papa

Not your traditional sit-down dinner! A special menu has been created featuring local cuisine. New Zealand crayfish, Clevedon coast oysters and King fish will be some of the gourmet items starring on the menu. There will be other vegetarian and meat options as well to ensure there will be something for everyone. Either choose to sit down or wander and graze. A local band, made up of some of our very own, will take to the stage at dessert time to raise the rafters!





Photo Credit: James Williams



Photo Credit: Ian Skipworth



Photo Credit: Ian Skipworth



Photo Credit: SeacologyNZ



Photo Credit: SeacologyNZ



Photo Credit: SeacologyNZ

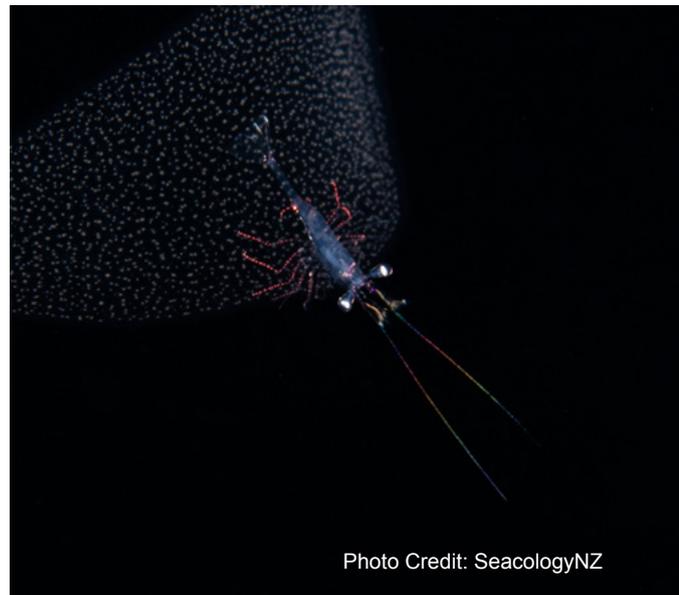


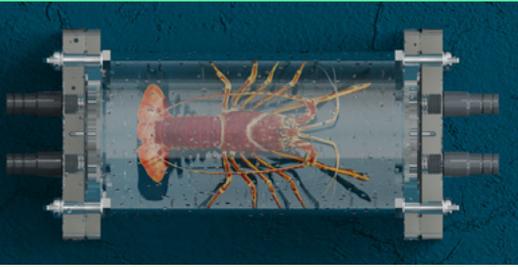
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Daphnia



Copepod



Amphipod



Isopod



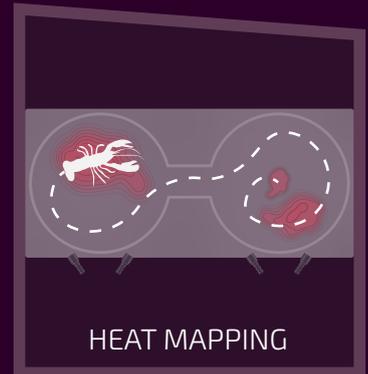
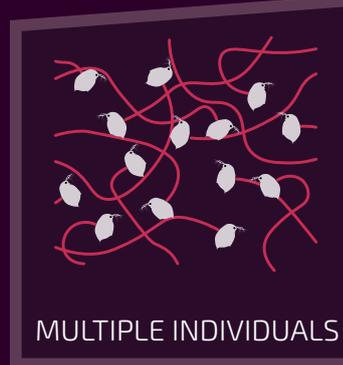
Fish Larva

# LoliTrack 5

Video tracking, behavior analysis software, and dual-choice tanks

- **TRUE 3D TRACKING**
- **STATISTICS & ANALYSIS TOOLS**
- **DATA AND MEDIA EXPORT**
- **FREE DEMO ONLINE**

**AND MUCH MORE**



# OmniCTRL

Multi channel water quality control systems

Monitor, log, and regulate water temperature, dissolved oxygen, pH/pCO<sub>2</sub>, salinity, and combinations hereof, in up to 24 independent tanks all controlled with intuitive software from a single Windows 10/11 computer.

- Multiple instruments connect to a single PC via Bluetooth or USB
- Built-in protocol designer – save and load customized protocol files
- Real-time compensation for temperature, salinity, and pressure
- Excellent stability for long-term monitoring/logging/regulation
- Time-stamped data in a .csv (Excel) file format



## ABOUT

Loligo® Systems develops research equipment for aquatic biology. Our products allow scientists all over the world to excel in the fields of swimming performance, respirometry, blood physiology and behavior analysis in a diversity of marine and freshwater organisms. We offer customized solutions as well as free scientific advice and support to anyone in need.

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Loligo® Systems