



Report on the 15th ICOC

*Name(s) in parentheses are of reporter(s)/writer/contributors

Proposal and timeline

The 14th ICOC was scheduled for 2020 in South Africa but was eventually cancelled due to the worldwide pandemic COVID-19 in 2021. Our proposal to host the 15th ICOC in Hiroshima, Japan was submitted to the General Secretary Prof. Hans Dam on 5 February 2020. A competing bid was received to organize the event in Latvia. After a consultative ballot among WAC membership, the President, Prof. Diana Galassi, and the Executive Council decided that the 15th ICOC would be held in Hiroshima, Japan and informed us of our successful bid on 28 August 2020. At the end of the e-ICOC (corresponding to the 14th ICOC), co-organized during 25-30 July 2022, by Prof. Rony Huys (Natural History Museum, London) and Dr. Alexandra Savchenko (Moscow State University), we briefly announced the venue, period and other information related to the 15th ICOC online. Already before the final decision on 28 August 2020, we had assembled the local organizing committee (LOC) and carefully discussed the venue and budgets with the Hiroshima Convention and Visitors Bureau and the Japan Convention Bureau. Soon after that, we requested the Plankton Society of Japan and Hiroshima University, and seven Japanese academic societies to become co-organizers and supporting organizations, respectively. The Plankton Society of Japan and the Japanese Association of Benthology officially agreed to publish the proceedings as a special issue of the international SCI-journal "Plankton and Benthos Research." Due to these developments, we were encouraged that these would be effective in enhancing participation. As a result of productive discussions during several Executive Council meetings in 2023, WAC decided to provide us with seed money and an extra budget in the event we needed additional financial support. At the time, we had not yet succeeded in obtaining sufficient funds and donations from any foundations and donors. Without such an encouragement from WAC, we would have lost our motivation. In addition, we polished up the schedules and plans in detail.

During 2022 and 2023, we identified suitable keynote speakers and organisers for four symposia. In 2023, we made a great effort to get enough funds to financially support not only the 15th ICOC but also the pre-conference workshop (PW), which has historically been the most important event in the week preceding the ICOC. Arguably the most difficult decision was how to run the conference in consideration of the prevalent impact of COVID-19. Options included organizing the event onsite, online only or running it as a hybrid conference. This choice totally depended on the expected number of participants but also our success in getting sufficient external income to finance the operation. In response to this uncertainty, Dr. Kaori Wakabayashi (secretary of the LOC) reached out to potential participants about their preferred mode of participation by circulating Google Form questionnaires during January–February 2023. Surprisingly, there was an overwhelming majority (about 90%) in favour of hosting the event onsite. Based on these results, it was decided to adopt a hybrid system for the 15th ICOC in consideration not only of COVID-19 but also of students and participants from developing countries who may have limited financial means to attend the conference in person. Based on this decision, we started estimating total budgets as exactly as possible and intensified our attempts to secure external funds and donations. Both Dr. Kaori Wakabayashi and Dr. Yusuke Kondo finalized the website of the 15th ICOC and PW on 1 September 2021 and frequently updated it. We also used SNSs to attract as many participants as possible. Online registration for 15th ICOC opened on 1 December 2023 and extended the deadline for early-bird registration to 23 February 2024. (Susumu Ohtsuka, Kaori Wakabayashi, Yusuke Kondo)

Participation

A total of 223 participants (190 in-person and 33 online), representing 28 countries, were welcomed to 15th ICOC. Unfortunately, two participants who were supposed to attend in-person did not appear during the conference. An online registration system was in place, and the programme and abstracts provided for participants were very informative. Several cases of inconvenience related to payment



were reported to the local organizing committee but all of them were resolved before the conference started. The official conference website had already been launched in September 2021 and acted as the main gateway to all announcements and developments related to the 15th ICOC. In order to spread the information more efficiently, particularly to the younger generations including students, monthly updates were posted on SNS (i.e. Facebook and X) together with a catching copepod photograph to attract the attention from readers. This proved to be effective to attract many student participants. (Susumu Ohtsuka, Kaori Wakabayashi, Yusuke Kondo)

Japan	in-person	71
	online	8
United States of America	in-person	18
	online	7
Korea	in-person	20
	online	1
Russian Federation	in-person	8
	online	3
Italy	in-person	9
	online	2
Philippines	in-person	10
	online	1
Thailand	in-person	10
	online	0
Mexico	in-person	5
	online	3
Belgium	in-person	5
	online	1
Norway	in-person	5
	online	0
Germany	in-person	4
	online	1
Taiwan	in-person	5
	online	0
South Africa	in-person	3
	online	0
China	in-person	3
	online	0

Poland	in-person	1
	online	1
Malaysia	in-person	1
	online	1
United Kingdom	in-person	2
	online	0
Brazil	in-person	2
	online	0
Denmark	in-person	2
	online	0
Ghana	in-person	0
	online	2
Canada	in-person	0
	online	1
Iceland	in-person	0
	online	1
France	in-person	1
	online	0
Switzerland	in-person	1
	online	0
Czechia	in-person	1
	online	0
Indonesia	in-person	1
	online	0
Austria	in-person	1
	online	0
Australia	in-person	1
	online	0

Programme

The conference kicked off with an ice breaker party on the evening of 2nd June. The scientific programme ran for four days (3rd, 4th, 6th, 7th June) from 8:30–9:00 am till 7:00–8:00 pm JST with two 15-min coffee breaks and a 1.5-hour lunch break each day. The mid-conference tour was organized on the 5th of June.

Due to time limitation during the conference, we could only accommodate up to 72 15-min oral

presentations, in addition to the keynote talks and symposia. A total of 75 abstracts offering oral presentations were submitted. We asked three Japanese researchers to reconsider presenting their research as poster presentations and they kindly accepted our request. Eventually 72 oral presentations were grouped in ten thematic sessions. However, three of them were cancelled at the last minute and two speakers did not appear at the time of their presentations. Consequently, 67 oral contributions (58 in-person and 9 online) were presented. Zoom was employed as the online communication platform for all oral sessions. There were minor communication issues between onsite and online attendees at the beginning of the Day 1, but these teething problems were swiftly resolved by our technical team and thereafter all online sessions proceeded smoothly. The chairpersons who were assigned to the oral sessions were very professional in ensuring the efficient running of the conference and especially timekeeping. All oral presentations were video-recorded. The videos were made available on the 15th ICOC YouTube playlist only to registered ICOC participants for the duration of 10 days after the conference. Every speaker was asked to give his/her consent to post their presentation online.

A total of 83 abstracts offering poster presentations were submitted. We accepted 86 poster presentations, and they were grouped in four thematic categories. Since six of them were cancelled at the last minute, a total of 80 posters (69 in-person and 11 online) were presented. More than half of the poster presenters who participated in-person also had their poster shown online. Poster presentations in-person were held in the evening of 3rd June for the odd numbers, and in the evening of 4th June for the even numbers. No fixed time frames were scheduled for the online poster presentations, but presenters communicated with conference attendees via the online chatting function. (Susumu Ohtsuka, Kaori Wakabayashi, Yusuke Kondo)

Group Photo

The conference group photo was taken at the main venue (basement 2 of the main venue International Convention Center Hiroshima (ICCH)) on Day 2 (3 June 2024) just after the Symposium 1. Participants gathered on the staircases of the garden, and the photographer took several snaps from the terrace on basement 1. More than 85% of the attendees participated. The photo was edited with inserting the conference name, location, duration, and logo by the photographer and the printed copies were made available for attendees at the registration desk from Days 3 to 6. (Kaori Wakabayashi, Yusuke Kondo)



Certificates of Conference Participation

Each participant received a certificate of conference participation via email. Certificates of presentation were also issued upon request by presenters. (Kaori Wakabayashi)

Keynote speakers

Considering the drastic and rapid changes in global environments, we requested Dr. Geoff Boxshall to talk about relationships between copepods and SDGs. He has mastered the biology of both free-living and parasitic copepods and talked about some essential perspectives for copepodologists based on his great experience. Copepodology is an integration of biological, chemical and physiological sciences. Another speaker was Prof. Yuichi Oba who is a superb specialist of bioluminescence of terrestrial and aquatic organisms. His presentation focused on the importance of



bioluminescent chemicals produced by planktonic copepods in the marine ecosystems and aimed at encouraging copepodologists to promote cooperation between biologists and chemists in the future. (Susumu Ohtsuka, Kaori Wakabayashi, Yusuke Kondo)

Prof. Geoffrey A. Boxshall (The Natural History Museum, London)

Title: Copepods and Sustainable Development, in the era of climate change

Copepods comprise one of the three hyper-abundant groups of metazoans and they occur more-or-less everywhere there is liquid water. They dominate the marine zooplankton and, through this in particular, play a pivotal role in the global biogeochemical cycles. Copepods are not especially species-rich but they are highly diverse in body form and lifestyle, with about a third of described species living as symbionts on hosts ranging from sponges to mammals. So how can our fascinating and beautiful copepods have an impact in the arena of Sustainable Development? In 2015 the United Nations Sustainable Development Summit adopted 17 Sustainable Development Goals (SDGs). Such intergovernmental initiatives are important because, at the highest levels, they help determine priorities for national government spending on science. A quick glance at these aspirational goals would suggest that one of them, Life below Water (SDG 14), is especially relevant to our copepod research community. However, the focus of SDG 14 is solely on the marine environment and we know that the role of copepods in freshwater ecosystems is equally vital. Inland waters and their inhabitants are included in Life on Land (SDG 15). The world of Copepod research and the world of SDGs seem to be polar opposites in the vast sphere of human endeavour so the primary focus of his presentation is to highlight the relevance of their work on copepods to biosphere-level SDGs but it will also stress the wider importance of copepods in issues such as human health and well-being, and food production and its impact on the environment. The SDGs were targeted for 2030 and progress to the halfway point was outlined. It isn't very encouraging! The final section of the presentation looked at climate change. Climate Action is SDG 13, but the pace of climate change is alarming. There are many uncertainties but we do know that, as the Earth warms, there will be a lot more ocean for copepods to inhabit.

Prof. Yuichi Oba (Chubu University, Japan)

Title: Copepods have changed the marine bioluminescence world

There are so many bioluminescent animals in the ocean, from unicellular radiolarians to bony fishes, and it is notable that most of these animals use the same chemical substance, called coelenterazine, as a substrate of their bioluminescence reactions. Some of them, such as cnidarian jellies, are unable to biosynthesize coelenterazine by themselves, thus they probably obtain the coelenterazine from diet of other marine bioluminescent animals possessing coelenterazine, and this is probably the same in bioluminescent fishes too. Now, who synthesized the coelenterazine in the ocean? We have proved that a luminous copepod has ability to biosynthesize the coelenterazine. Considering the extreme richness of the copepods in the ocean, we can suggest that many (or the most) of the marine bioluminescent animals use the coelenterazine produced by copepods via marine food chain transfer. Copepods now sustain the world fisheries, and in ancient times, changed the world of marine light productions.

Symposia

Information and suggestions were gathered during several WAC meetings with regard to the dedicated symposia to be organized during the 15th ICOC. It was finally decided to organize four symposia which are listed and summarized below (Susumu Ohtsuka)

Symposium 1

Evolutionary Dynamics

Symposium Organizers: Prof. Grace Wyngaard and Dr. Marvin Choquet



Copepod genomes hold the key to understanding their evolution and the mechanisms underlying their diverse and fascinating adaptations. In the past decade, remarkable advances in molecular methods and sequencing technologies have revolutionized biological research, providing unprecedented access to previously elusive information. Advances in genomics have the potential to bring a new light to unresolved issues across the fields of taxonomy, physiology, phylogeny and ecology. In Copepods, however, our access to genomic information is fiercely challenged by small body sizes, large duplicated or repeated genomes and unusually high levels of heterozygosity that make current technologies stutter. Creative strategies are therefore required to uncover the molecular mechanisms behind traits exhibited by invasive species, and to reveal the genetic basis of Copepods' responses to climate change. Join us in this session of Evolutionary Dynamics in copepods, where we will discuss the invaluable insights attainable from copepod genomes, the persistent challenges hindering understanding of their evolution, and the innovative approaches developed by copepodologists to overcome these.

- 1. Genome architecture evolution in an invasive copepod** By Carol Lee
- 2. Copepod phylogenomics with a target-enrichment probe set for 100's of genes across all copepods** By Jimmy Bernot
- 3. Unlocking the first large genome of the key zooplankton genus *Calanus*: challenges and insight** By Marvin Choquet
- 4. An integrated phylogenomic approach for potential host-associated evolution of monstrolloid copepods** By Donggu Jeon

Symposium 2

Diversity, Ecology, and Evolution of Symbiotic Copepoda

Symposium Organizers: Dr. Julianne Kalman Passarelli and Dr. Danny Tang

Nearly 15,000 valid copepod species are known, about half of which live in symbiotic associations with nearly every animal group, ranging from sponges to cetaceans. Copepods are common parasites of marine and freshwater fishes, and they are known to cause diseases in finfish and shellfish aquaculture. They may also serve as useful bioindicators of host dispersal, host phylogeny, host population structure and both natural and anthropogenic disturbances. Only about 2% of aquatic invertebrate species and less than 20% of fishes have been surveyed for symbiotic copepods, which means there are innumerable symbiotic copepods waiting to be discovered and formally described. The global shortage of technical expertise in copepod taxonomy is a threat to biodiversity studies and aquatic animal health industries.

- 1. The 5th International Workshop on Symbiotic Copepoda (IWOSC)** By Julianne Kalman Passarelli and Danny Tang
- 2. Evolutionary cul-de-sacs and highly transformed body plans: how to place them in the copepod Tree of Life** By Rony Huys and Alexandra Savchenko
- 3. Difficult species identifications with *Pandarus* as a case study** By Susan Dippenaar
- 4. Parasitic copepods as pests in Asian aquaculture** By B.A. Venmathi Maran

Symposium 3

Non-Indigenous Estuarine Copepods: Modes of Transport, Geographic Spread, and Accommodation

Symposium Organizer: Prof. Wim Kimmerer

Species introductions are a global source of concern for organisms of all kinds, and impacts of introductions can be substantial. Numerous introduced marine and estuarine copepod species have been identified worldwide, and the number is certain to increase, yet in contrast to more-studied



groups and habitats, little is known of their movements or impacts. This symposium examined several questions about introduced copepods: 1) How are they being transported; 2) What conditions in the recipient ecosystems allow for a successful invasion; and 3) How are recipient ecosystems and food webs affected? Three contrasting case studies of introduced copepods were provided which together address each of these questions.

- 1. Copepod introductions across the Pacific coast of North America: Origins, modes of transport, ecological impacts, and responses to a warming planet** By Eric Dexter
- 2. Ingredients for a successful invasion - The case of *Pseudodiaptomus marinus*** By Marco Uttieri
- 3. How four introduced copepod species interact in the San Francisco Estuary: accommodation in a low-productivity environment** By Wim Kimmerer

Symposium 4

Freshwater Copepods: Redefining Biology, and Unveiling Ecological and Biogeographical Patterns

Symposium Organizer: Prof. Diana M. P. Galassi

In the face of an ever-increasing knowledge of marine copepods, biological, ecological, and biogeographical knowledge of copepods from fresh continental waters is still scant. The decline of invertebrate taxonomy and the lack of adequate molecular support result in the lack of knowledge of freshwater copepod diversity in freshwaters on a global scale. This cognitive gap becomes even more evident in groundwater environments, whose global diversity is still partially known, with severe repercussions on the knowledge of the functional role of copepods in these environments, of their autecology and on the reconstruction of the evolutionary history of current copepods' patterns from local to the broader continental or global scale. In light of the global groundwater crisis and considering the ecosystem services that copepods provide in both surface waters and groundwaters, a new impetus of the research of the copepods living in these environments is imperative.

- 1. Unseen, unheard: Uncovering legislative shortfalls and research communication inadequacies in groundwater copepod conservation** By Di Lorenzo Tiziana
- 2. Global patterns of copepod diversity in subterranean and interstitial aquatic environments** By Nancy F. Mercado-Salas and Alejandro Martínez
- 3. Japanese Satoyama landscape and freshwater copepods** By Wataru Makino
- 4. Conservation biogeography of European copepods through the lens of ecological modelling** By Francesco Cerasoli and Diana M. P. Galassi

Maxilliped lecture

Prof. Hans G. Dam (University of Connecticut, USA)

Title: Copepods as model systems for the study of the response of the biota to global change

Copepods are, arguably, the most numerous metazoans in the oceans. Consequently, they play a major role on food webs by linking microbial communities to upper trophic levels. Through the processes of ingestion, defecation, excretion, and through diel vertical migration, copepods are also a key component of biogeochemical cycles. One of the most formidable scientific challenges is predicting the biota response and scope for adaptation to aquatic global change drivers such as warming, acidification, deoxygenation, harmful algal blooms, pollution, etc. Because of their short generation times, large population sizes, and extant genetic variation, copepods are ideal candidate systems for understanding the response of animals to global change. Yet, most recent reviews of the literature on the topic ignore copepods. My talk will focus on recent advances documenting the response of copepods to global change. I will discuss approaches to documenting adaptive responses and highlight examples, limitations to predictions, and fruitful avenues of research to move the field forward.

Pre-conference Workshop

The 8th Pre-conference Workshop was hosted at the Fisheries Laboratory, Blue Innovation Division, Setouchi Carbon Neutral Research Center in Takehara City, Hiroshima and was organized by Rony Huys (Natural History Museum, London, U.K.), Susumu Ohtsuka (local host) and Danny Tang (Orange County Sanitation District, U.S.A.). The venue provided lab facilities and accommodation to students.

Twenty-four students representing 12 countries attended the workshop, including participants from Japan, Taiwan, Thailand, the Philippines,

Malaysia, South Korea, Russia, Germany, Italy, Norway, South Africa and Brazil. The students were welcomed by an international team of 13 tutors who presented lectures on a variety of copepods, ranging from freshwater to marine, and from free-living to parasitic. The first day provided an introduction to copepod morphology, ordinal classification and phylogeny (Huys), diversity of life cycles (Huys), taxonomic techniques for the study of copepods (Huys), morphology and systematics of marine harpacticoids (Huys), ecology of benthic copepods in extreme environments (Shimanaga), evolutionary trends in planktonic calanoid copepods (Ohtsuka), taxonomy and distribution of Oithonidae (Nishida), taxonomy and distribution of Oncaeidae and Corycaeidae (Itoh), and distribution of planktonic calanoid (Yamaguchi). The second day was primarily focused on parasites, including lectures on symbiotic copepods utilizing invertebrate hosts (Huys), parasitic copepods found on egg-masses of lobsters (Wakabayashi), parasitic copepods on vertebrate hosts (Tang), how do caligids adhere to fish (Ohtsuka), and taxonomy of Pennellidae and Chondracanthidae in Asian waters (Aneesh).

The lecture-based part of the workshop was interrupted for two days during which tutors and students could take part in the unique experience of staying overnight on the *TRV Toyoshio-maru* of Hiroshima University. Their time on the training research vessel not only allowed students to gain practical experience with a variety of sampling gears but also gave them an impression of how life on board is like when one wants to sort samples and observe specimens during the night. Feedback from previous workshops repeatedly stressed the desire to include fieldwork activities rather than lab-based sessions in the schedule and this workshop did exactly that which made it unique compared to any other WAC workshop organized before.

On the last day the focus of the lectures shifted to different copepod groups and some esoteric subjects. Lectures provided a brief introduction to the taxonomy and phylogeny of Asian freshwater cyclopoids (Tomikawa), followed by a comprehensive review of the systematics and morphology of continental copepod (Mercado-Salas). The interface between phenotypes and genotypes and how it relates to an integrated evaluation of marine calanoid biodiversity was explained by Iole Di Capua. The day concluded with a lecture on how copepods act as hosts to other crustaceans (Savchenko) and a general introduction to the basic principles of zoological nomenclature (Huys).



Throughout the workshop the local hosts organized additional scientific and cultural activities including an evening barbeque event during which students and tutors could socialize and discuss copepod research topics. At the end of the workshop participants received a certificate and those who could not attend the conference were granted free online access to the talks and poster sessions.

Special Exhibition

A special exhibition was organized by the Hiroshima University Museum in the poster exhibition hall at the conference center from 3rd to 7th June. The exhibition focused on *Takamochi Mori*, a globally renowned copepodologist, who was born in Hiroshima and killed by the atomic bomb on 6 August 1945. At this exhibition, participants had the opportunity to see the original zinc plates of Takamochi Mori's (1937) monograph entitled "The Pelagic Copepoda from the Neighbouring Waters of Japan" which everyone thought had been destroyed by the atomic bomb that was dropped on the central part of Hiroshima City on 6 August 1945. Although Mr. Mori was generally considered to have been a self-taught plankton researcher, his monograph is the result of almost 10 years of painstaking research and investigation. In his 150-page compendium he illustrated 175 copepod species in 80 plates and provided brief descriptions in English. The original 76 plates, part of these 80 illustrations, were discovered in 2015 during a survey by Hiroshima University. This volume does not only represent the culmination of his energies at a young age but also symbolizes the immeasurable impact it had for future research around the world. After his death, the book was republished in 1964 which features a photograph of Takamochi and a poignant introduction by his wife Ayako Mori. It is a representative work that is widely cited and referred to by modern plankton researchers.

During this conference, the original zinc plates of Mori's work were put on display, as well as related books and papers. A commemorative stamp was created that allowed visitors to experience zinc plate printing as a hands-on experience. We had visitors stamp special Japanese paper and presented it to them in an original clear file. Linking this to a tour of the Hiroshima Peace Memorial Park, visitors were able to learn anew about Mori's passion and belief in his research through these plates in a special place like "Hiroshima". It was also an opportunity to think together about world peace. (Norio Shimizu)



Demonstration of the traditional Japanese art of ORIGAMI

Next to the conference reception desk, staff from the Hiroshima University Museum gave a demonstration of ORIGAMI paper folding and gave away gifts. There were ORIGAMI figures of a variety of creatures on display, including traditional cranes, samurai helmets, flowers, copepods, horseshoe crabs, frogs, stag beetles, and whales. Participants were delighted to try out the ORIGAMI and take them back to their home countries as cherished souvenirs. (Norio Shimizu)



Mid-conference tour

The mid-conference tour visited Akiyoshidai, the largest karst plateaus in Japan and observed groundwater crustaceans such as copepods and amphipods. Plankton nets were used to collect planktonic copepods in the cave stream, but samples could not be obtained, probably due to low densities. Some copepod samples were obtained from the mud at the bottom of the groundwater.

These samples will be taxonomically examined by researchers from different countries as an international collaboration in the future. We believe that the participants of this tour were able to enjoy the landscape of Akiyoshidai, one of Japan's representative karsts, as well as gain a first-hand understanding of the habitat of groundwater copepods. After the tour in the cave, participants had lunch at Kamefuku in Yuda Onsen, Yamaguchi City, followed by the Maxilliped Lecture by the WAC President. The tour also included a walk along Kintai



Bridge in Iwakuni City and dinner at the Iwakuni International Kanko Hotel. Sake from Yamaguchi, was served, and participants experienced pressing sushi at the Iwakuni-zushi making demonstration. The triennial Monoculus Award ceremony was held at the dinner venue, during which Prof. Ohtsuka became the first Japanese copepodologist to receive the award in recognition of his research achievements on copepods and contributions to the WAC. (Ko Tomikawa)

Shops

The gift shop “Kurumiya” opened next to the conference reception area. Tie pins, magnets and other gadgets with various zooplankton patterns, including copepods, were for sale. Many participants enjoyed shopping. (Yusuke Kondo)



Exhibition of Observatory Equipment

Two companies exhibited their scientific field equipment at the poster session area. JFE Advantech Co., Ltd., a global manufacturer of oceanographic instruments located in Japan, exhibited sensors that measure CTD, chlorophyll, turbidity, dissolved oxygen, water flow, wave height, and more. SeaBreath Co., Ltd. demonstrated PlanktoScope V.2.6. which is a flow-through plankton imaging device that can take quantitative, high-resolution images of the myriad planktonic organisms living in water. (Yusuke Kondo)

WAC Business Meeting

Summary from Hans Dam, WAC President at the time of the Assembly

Election of WAC Officers: The election ran by secret ballot. Members of the 15th ICOC Steering Committee tabulated the votes. The 2024-2027 WAC elected officers are: Rony Huys (President),



Tiziana Di Lorenzo (Vice-President), Chad Walter (Treasurer), Leocadio Blanco-Bercial (General Secretary), Iole Di Capua (Local Secretary), and Council members Alexandra Savchenko, James Bernot, Iole Di Capua, Marvin Choquet, Kaori Wakabayashi, and Argun Özak. Hans Dam will serve as Past-President according to WAC by-laws.

16th ICOC venue: The 16th ICOC will be held in Naples, Italy, after the proposal put forward by EC member Iole Di Capua was enthusiastically approved by member vote at the assembly.

Secretary Report: WAC membership remains steady at about two hundred members in good standing. WAC established a new fee structure in 2024 since fees had not been raised in many years, but WAC also instituted membership fee discounts for 2- and 3-year membership terms. A new Secretary must be elected after Leo Blanco-Bercial's term expires in 2027.

Treasurer's report: The official Treasurer's report was sent to all members in April, 2024, showing a positive balance of almost US \$59,000. WAC has exceedingly low overhead. Most WAC expenses go to supporting the ICOC and its pre-conference workshop. The first helps keep conference fees modest. The second provides training to students by world-class experts. WAC also funds the Student Grant Program (see below) and the ICOC's Student Awards. A new Treasurer must be elected after Chad Walter's term expires in 2027.

Webmaster report: Julianne Passarelli, the WAC webmaster, provided updates on the website (monoculus.org) and thanked the website hosts and all those who have recently contributed items for publication on the site.

Student Grant Program: The Student Grant Program ran successfully for the first time in 2023, led by Executive Council members James Bernot and Alexandra Savchenko. Twelve outstanding proposals were submitted and three awards were funded at \$ 1,000 each. We will be announcing a new request for proposals in fall 2024.

Peer-J WAC hub: WAC is establishing a partnership with the journal Peer-J (<https://peerj.com/life-environment/>) that provides a WAC publishing hub. Hubs provide a platform that highlights discipline-specific papers and provide branding to societies (<https://peerj.com/hubs>). WAC members who publish through the hub will receive a 10% discount on the journal's publication fee. This benefit more than pays for a three-year membership. WAC and Peer-J are currently working on the launch of the hub, which is expected for fall of 2024.

Remarks from departing and incoming WAC Presidents: Hans Dam (departing President) and Rony Huys (incoming President) provided remarks to thank the conference participants, the 15th ICOC organizers, and the departing and the incoming members of the WAC Executive Council. (Hans G Dam)

Student Presentation Awards

The 15th ICOC in Hiroshima, Japan included 30 student oral presentations and 32 student poster presentations. The student presentation awards committee consisted of nine judges that each evaluated all student presentations. The judges were: Aneesh Panakkool, Iole Di Capua, James Bernot, Juli Passarelli, Marvin Choquet, Nancy Mercado-Salas, Alexandra Savchenko, Toru Kobari, and YenJu Pan. The committee selected three poster award winners and four oral presentation award winners, with the Kabata Award given to the best overall student oral presentation. The award winners are as follows (in no particular order).

Poster Awards:

- 1) Anitha Mary Davidson for "Seasonal dynamics of copepod assemblages in response to hydrothermal vent influence in different monsoonal periods off northeast Taiwan"
- 2) "Joye" Zhou Yifei for "Evolutionary history and molecular evolution of the α -carbonic anhydrase gene family across arthropods"
- 3) Levin M. Wieschermann for "A new species of the genus *Aphotopontius* Humes 1987 (Siphonostomatoida, Dirivultidae) from a vent field at the Southeast Indian Ridge"

Oral Presentation Awards:

- 1) Rodrigo B. Narciso for “Parasites from the south: integrative taxonomic studies of parasitic copepods of marine and freshwater fishes from Brazil and South Africa”
- 2) Sidonie E. J. Rousseau for “Antioxidant mechanisms in response to heat and oxidative stress in the copepod *Calanus finmarchicus*”
- 3) Vera Emelianenko for “Life cycle stages and host-parasite interaction of a monstrilloid copepod associated with a sponge-inhabiting syllid polychaete”

Kabata Award:

Robert Míč for “Diversity, phylogeny, and biogeography of parasitic copepods (Copepoda: Cyclopoida) of freshwater fishes from the Old World – new discoveries and future goals”
(James P Bernot)

Monoculus Awards

Prof. Susumu Ohtsuka (Hiroshima University) was nominated by the WAC EC members and was awarded the Monoculus Award in recognition of his massive contributions to copepodology and for supporting activities of the WAC. The ceremony was held at the hotel in Iwakuni City during the mid-conference tour. (Kaori Wakabayashi, Yusuke Kondo)

Closing Ceremony

On the last day of the 15th ICOC, a Farewell party was held at the Hiroshima City BUNKA KORYU KAIKAN. The party started with a Japanese sake *kagami-wari* by Hans Dam (WAC President), Mark Ohman (Vice-President), and Susumu Ohtsuka (15th ICOC Local Secretary). Delicious food and drinks were served, and participants enjoyed the Japanese fare and conversation. In the middle of the party, a *kagura* performance by the Suzuhari Kagura team was shown. The party concluded with the awarding of the student presentation awards, a speech by incoming WAC president Rony Huys, by Iole Di Capua from Italy, the next host country, and by executive committee member Koichi Ara. (Yusuke Kondo, Ko Tomikawa, Kenji Toyota)



Proceedings

The proceedings of the 15th ICOC will be published as a special volume of *Plankton and Benthos Research* issued by both The Plankton Society of Japan and the Japanese Society of Benthology, and is scheduled to be published by August 2025. Twenty-five papers were submitted to the proceedings by the deadline. (Susumu Ohtsuka)

Budget

External income for the 15th ICOC was generated by registration fees of participants, WAC’s seed money, and financial support by foundations and many private donations. Sponsor names were already listed in the programme distributed at the conference. The expenses for the 15th ICOC were mainly payments for the rental of venues, digital systems for registration, management of hybrid conferences, meals, mid-conference tour, and accommodation fees for keynote and symposium speakers, excellent students, and local staff members.



Income				USD
Registration fees				59,590
	Early Bird Regular Onsite	360 USD×91 persons	=32,760 USD	
	Early Bird Regular Online	230 USD×10 persons	= 2,300 USD	
	Early Bird Student Onsite	200 USD×62 persons	=12,400 USD	
	Early Bird Student Online	100 USD×9 persons	= 900 USD	
	Late Registration Regular Onsite	430 USD×3 persons	= 1,290 USD	
	Late Registration Regular Online	300 USD×1 person	= 300 USD	
	Late Registration Student Onsite	260 USD×1 person	= 260 USD	
	Late Registration Student Online	160 USD×2 persons	= 320 USD	
	Accompany	200 USD×15 persons	= 3,000 USD	
	Lunch Box, T-shirt		6,060 USD	
	WAC standard seed money			10,000
Grants	The Japan World Exposition 1970 Commemorative Found / Kansai Osaka 21st Century Association			19,730
	International Conference Grant by Kurita Water and Environment Foundation			6,580
	Inoue Foundation for Science			5,260
	The Hirsoshima Convention & Visitors Bureau			3,950
	Demonstration Project for the Enhanced Impact of Hosting International Conference supported by the Japan Tourism Agency			52,650
Donations				8,750
Total income				166,510 ...①
Expenditure				USD
	Venue rental expenses			16,860
	Advertising and promotion expenses			1,540
	Online registration system, management of hybrid conferences			29,060
	Commemorative goods			7,150
	Special exhibition			2,940
	Accommodation fee for keynote speakers, symposium speakers, excellent students and young researchers, conference staff, part-time students			14,600
	Salary for part-time students			3,480
	Foods, drinks (Ice breaking party, coffee break, farewell party, lunch, others)			23,340
	Events (Kagura, tour for accompanying persons)			3,880
	Mid-conference tour			52,650
	Office supplies and miscellaneous expenses			2,530
	English proofreading fees for proceedings			5,480
	Refund to WAC			3,000
Total expenditure				166,510 ...②

$$(\text{Total income}) - (\text{Total expenditure}) (\text{①} - \text{②}) = 0$$

1 USD=150 YEN

(Yusuke Kondo, Ko Tomikawa, Kenji Toyota)