

## ***Unit Name***

Evolution, Cell Biology, and Symbiosis Unit

## ***Collaborations***

Marek Elias, Ostrava University, Czech Republic, Symbioses of protists  
Cheryl Ames, Tohoku University, Japan, Symbioses of marine invertebrates and eDNA  
James Reimer, University of Ryukyus, Japan, Symbioses of marine invertebrates  
Hidetaka Nomaki, JAMSTEC, Japan, Symbioses of foraminifera  
Kevin Wakeman, Hokkaido University, Japan, Symbioses of dinoflagellates  
Ivan Cepicka, Charles University, Czech Republic, Symbioses of anaerobic protists  
Courtney Stairs, Lund University, Sweden, Symbioses of anaerobic protists  
Roxanne Beinart, University of Rhode Island, USA, Symbioses of anaerobic protists  
Lynn Cook, University of Queensland, Australia, Scale insect phylogenomics  
Laura Ross, University of Edinburgh, UK, Scale insect genomics  
Andrew Mongue, University of Florida, USA, Scale insect genomics  
Tomas Pluskal, IOCHB Prague, Czech Republic, Metabolomics  
Eric Libby, Umea University, Sweden, Metabolic modeling of symbioses  
Akinori Yabuki, JAMSTEC, Japan, Heterotrophic protists  
Ryoma Kamikawa, Kyoto University, Japan, Heterotrophic protists  
Kenji Suetsugu, Kobe University, Japan, Heterotrophic plants

## ***Research Personnel***

Michelle Leger, Staff Scientist  
Jinyeong Choi, Postdoctoral Scholar  
Yumiko Masukagami, Technician  
Yi-Kai Fang, Technician  
Claudia Rabuffo, Canon Research Fellow  
Javier Tejeda Mora, PhD student  
Pradeep Palanichamy, PhD student  
Yong Heng Phua, PhD student  
Arno Hagenbeek, PhD student  
Vera Emelianenko, PhD student  
Anastasiia Borodina, PhD student  
Vasyl Vaskivskyi, Rotation Student

Teresa Bosch Tamayo, Rotation Student  
 Yulia Shcherbakova, Rotation Student  
 Amy Hana Morrell, Rotation Student  
 Dewi Langlet, Visiting Researcher  
 Maria Eduarda Alves dos Santos, Visiting Researcher  
 Iines Salonen, Visiting Researcher  
 Yufu Unten, Santory Research Fellow  
 Matthew McCormack, Visiting Research Student  
 Akito Shima, Research Intern  
 Masaru Sanari, Research Intern  
 Hong Gao, Research Intern  
 Gayun Kim, Research Intern  
 Kotchanipa Rukruam, Research Intern  
 Vivienne Gao, Research Intern

## ***Scholarly Contributions and Creative Productions (by Faculty)***

### ***Journal Article***

1. Ravasi, T.; Wee, H. B.; dos Santos, M. A.; Kise, H.; Mizuyama, M.; Dudoit, A. 'alani; Jamodiong, E.; Satoh, N.; Soong, G. Y.; Kurihara, H.; Toonen, R. J.; Husnik, F.; Iguchi, A.; Reimer, J. D.  
Shifts in Coral Reef Holobiont Communities in the High-CO<sub>2</sub> Marine Environment of Iōtorishima Island. bioRxiv 2024.
2. Cho, A.; Lax, G.; Livingston, S. J.; Masukagami, Y.; Naumova, M.; Millar, O.; Husnik, F.; Keeling, P. J.  
Genomic Analyses of Symbiomonas Scintillans Show No Evidence for Endosymbiotic Bacteria but Does Reveal the Presence of Giant Viruses. PLoS genetics 2024, 20, e1011218.

### ***Presentation at Conference***

1. Husnik, F.  
Foraminera: The Last Frontier of Protist Symbioses. 2024 CGUE Conference on Unicellular Eukaryotes 2024.
2. Husnik, F.  
Integrating Omics with 3D Imaging in the Tripartite Nested Mealybug Symbiosis. International Congress of Entomology 2024 2024.
3. Husnik, F.  
Cataloging Marine Symbioses with Omics and Advanced Imaging Methods. WPI Tohoku University and JAMSTEC: AIMEC Mini Symposium 2024.

### ***Seminars***

1. Husnik, F.  
Foraminifera: One of the Last Frontiers of Protist Symbioses. 2025.
2. Husnik, F.

- The Fate of Obligate Endosymbionts: Reduction, Integration, or Extinction. 2025.
3. Husnik, F.  
The Fate of Obligate Endosymbionts: Reduction, Integration, or Extinction. 2025.
  4. Husnik, F.  
The Fate of Obligate Endosymbionts: Reduction, Integration, or Extinction. 2025.
  5. Husnik, F.  
Two Billion Years of Eukaryotic Symbioses. 2024.
  6. Husnik, F.  
Integrating Omics with 3D Imaging to Understand How Endosymbionts Become Organelles. 2024.

### ***Scholarly Contributions (by Unit Members)***

Name of Unit Member	Type	Title	Outlet	Publisher	Year Pub
Yumiko Masukagami	Journal Article	Plasma membrane damage limits replicative lifespan in yeast and induces premature senescence in human fibroblasts		Nature Aging	2024
Michelle Leger	Journal Article	Evolution: A gene-rich mitochondrial genome sheds light on the last eukaryotic common ancestor		Current Biology	2024
Michelle Leger	Journal Article	Reconstructing the last common ancestor of all eukaryotes		PLoS Biology	2024
Dewi Langlet	Poster Presentation at Conference	Meiobenthos contribution to bioturbation	Deep-Sea Biology Symposium, Hong Kong		2025
Vivienne Gao	Poster Presentation at Conference	Global population genomics of Palythoa corals indicates connectivity between the Atlantic, Indian, and Pacific oceans	Hot Chanpuru Science Conference, University of the Ryukyus		
Vera Emelianenko	Poster Presentation at Conference	Exploring Diverse Symbiotic Microeukaryotes Associated With Okinawa Coral Reefs	Hot Chanpuru Science Conference, University of the Ryukyus		
Javier Andres Tejada Mora	Poster Presentation at Conference	Integrating -omics and 3D imaging for a bacterium within bacterium within insect endosymbiosis	20th Annual International Conference of the Metabolomics Society		
Arno Hagenbeek	Poster Presentation at Conference	Midichloriaceae bacterium from terrestrial arthropods found as symbiont in a marine nematode	19th International Symposium on Microbial Ecology, South Africa		
Pradeep Palanichamy	Poster Presentation at Conference	The diversity and plant-to-insect transitions of facultative bacterial symbionts in scale insects	ICE2024 International Congress of Entomology2024		
Akito Shima	Poster Presentation at Conference	The Origin and Evolution of Genome Chimerism in the	The 14th Asian Symposium of Microbial Ecology		

Name of Unit Member	Type	Title	Outlet	Publisher	Year Pub
Mealybug Endosymbiont Tremblaya phenacola					
Dewi Langlet	Poster Presentation at Conference	“Hoshizuna: the floating star sand” art installation	Deep-Sea Biology Symposium, Hong Kong		2025
Jinyeong Choi	Presentation at Conference	Diversification of Scale Insects Driven by Independent Establishments of Microbial Endosymbiosis	THE 2024 AUSTRALIAN ENTOMOLOGICAL SOCIETY 55TH ANNUAL GENERAL MEETING AND SCIENTIFIC CONFERENCE		
Jinyeong Choi	Presentation at Conference	Parallel evolution of Bacteroidota into highly integrated endosymbionts of scale insects (Hemiptera: Coccoomorpha)	The 84th Annual Meeting of the Entomological Society of Japan • The 68th AEZ annual meeting Joint Meeting		
Jinyeong Choi	Presentation at Conference	Parallel evolution of Bacteroidota into highly integrated endosymbionts of scale insects (Hemiptera: Coccoomorpha)	2024 International Congress of Entomology, Kyoto		
Vera Emelianenko	Presentation at Conference	Life cycle stages and host-parasite interaction of a monstrilloid copepod associated with a sponge-inhabiting syllid polychaete			
Javier Tejeda Mora	Presentation at Conference	Usage of computational methods, omics, and imaging to describe non-model symbiotic systems	Hot Chanpuru Science Conference, University of the Ryukyu		
Jinyeong Choi	Presentation at Conference	Evolution of scale insects and their microbial symbionts.	International Workshop ‘Insight & updates on evolution and diversity of insect gut microbiome’		
Anastasiia Borodina	Presentation at Conference	Evolutionary cell biology of aerobic and anaerobic jakobids	Hot Chanpuru Science Conference, University of the Ryukyu		
Dewi Langlet	Presentation at Conference	One host to rule them all: symbiosis in benthic foraminifera	Journée du Microbiome, Nantes, France		2024
Jinyeong Choi	Seminars	Parallel Evolution of Microorganisms as Long-Term Endosymbionts of Scale Insects	Biological Science College, Seoul National University		

### ***Honors, Awards & Fellowships***

2023

OIST Faculty Excellence in Mentoring Award, OIST最優秀指導教員賞, 2024, OIST Graduate School

2023

OIST Students' Choice Teaching Award, OIST学生選出最優秀教員賞, 2024, OIST Graduate School

Honors, Awards & Fellowships (only by unit members)

2025

Anastasiia Borodina, Holz-Conner Award (travel grants), ホルツ-コナー賞, 2025, International Society of Protistologists, 学会年次会議参加のための旅費助成金

2025

Olha Sur, Holz-Conner Award (travel grants), ホルツ-コナー賞, 2025, International Society of Protistologists, 学会年次会議参加のための旅費助成金

2024

Akito Shima, Talk Award, 口頭発表優秀賞, 2024, the 37th Meeting of Japanese Society of Microbial Ecology, 口頭発表優秀賞

2024

Yong Heng Phua, Poster award, ポスター優秀賞, 2024, EMBO Ultrastructure Expansion Microscopy workshop, ポスター優秀賞

External Service

2024

Peer Reviewer, Current Biology

2024

Peer Reviewer, Cell

Outreach Activities (For Unit Members Only)

2024

Vera Emelianenko, Nagasaki Minami High School visit, OIST

2024

Arno Hagenbeek, Keio Summer Camp 2024, OIST ECBSU lab

2024

Vera Emelianenko, Keio Summer Camp 2024, OIST ECBSU lab

2024

Javier Tejeda Mora, Career Talk and Lab tour at OIST Science Education Program (SEED), OIST Graduate School

2024

Vera Emelianenko, Career Talk and Lab tour at OIST Science Education Program (SEED), OIST Graduate School

Workshops and Seminars (Organized and Hosted by Faculty/Units)

Speaker Name(s)	Title	Location	Date
Dr. Kathrine Tan	Phospholipid Dependency in Buchnera-Aphid Symbiosis: A Bioinformatics and Biochemical Perspective	L4F01, Lab4	2024
Prof. Mami Nomura	Skillful cell behavior in the construction of testate amoebae shells	L4F01, Lab4	2024
Drs. Martin Kolisko, Elisabeth Hehenberger, Kacper Maciszewski, Monika Wisniewska	Introduction to Phylogenomics and the software Phylofisher	C700, Lab3	2024
Dr. Tomonari Nozaki	Polyploidy: an old but new perspective on the evolution of insect-bacteria partnerships	L4F01, Lab4	2024
Dr. Tomáš Pluskal, Dr. Robin Schmid, Prof. Sebastian Böcker, Dr. Louis-Félix Nothias, Dr. Corinna Brungs, Dr. Tito Damiani	Okinawa Workshop for Computational Mass Spectrometry	Sydney Brenner Lecture Hall, B250	2024

Speaker Name(s)	Title	Location	Date
Prof. Cheryl Lynn Ames	Changing Approaches to Monitoring Marine Biodiversity Change: An Overview of the WPI-AIMEC Marine Biology Integrative Analysis Unit	L4F01, Lab4	2024
Prof. Shinichiro Maruyama	Environmental responses of symbiotic algae underlying molecular interactions and circulations in coral reefs and other photosymbiotic ecosystems	L4F01, Lab4	2024
Mr. Dustin Dial	Endosymbiont genome evolution and the dynamics of host-symbiont interplay across changing diets in the sap-feeding Adelgidae	L4F01, Lab4	2024
Prof. Yi Hu	Symbiotic solution to nitrogen limitation in herbivorous ants	L4F01, Lab4	2024
Prof. Rony Huys	Copepods – an introduction to the most abundant metazoan clade of the Tree of Life	L4F01, Lab4	2024
Dr. Ryoma Kamikawa	Evolutionary losses of photosynthesis in eukaryotic microalgae	OIST Campus C210	2023