

Unit Name

Molecular Genetics Unit
Adjunct Professor Daniel S Rokhsar

Research Personnel

Gustavo Sanchez, Staff Scientist
Ryosuke Kimbara, Research Fellow
Lin Zhang, Research Unit Technician
Ferdinand Marlétaz, Visiting Researcher
Chikatoshi Sugimoto, Visiting Researcher
Diego Gutierrez Vilarnau, Research Intern

Collaborations

Prof. Dario Lupianez, Centro Andaluz de Biología del Desarrollo, Seville, Spain, The evolution of metazoan genomes
Prof. Chris Lowe, Hopkins Marine Station, Stanford University, USA, The evolution of metazoan genomes
Dr. Laurent Formery, Hopkins Marine Station, Stanford University, USA, The evolution of metazoan genomes
Dr. Steven Haddock, Monterey Bay Aquarium Research Institute, USA, The evolution of metazoan genomes
Dr. Ferdinand Marletaz, University College, London, UK, The evolution of metazoan genomes
Dr. Darrin Schultz, University of Vienna, Austria, The evolution of metazoan genomes
Prof. Jeramiah Smith, U. Kentucky, USA, The evolution of metazoan genomes
Prof. Richard E. Green, University of California, Santa Cruz, USA, The evolution of metazoan genomes
Prof. Manuel Talon, Instituto Valenciano de Investigaciones Agrarias, Spain, Origins and diversity of citrus
Prof. Fred Gmitter, University of Florida, USA, Origins and diversity of citrus
Prof. Masashi Yamamoto, Kagoshima University, Japan, Origins and diversity of citrus
Dr. Albert Wu, DOE Joint Genome Institute, USA, Origins and diversity of citrus
Dr. Hideyasu Kinjo, Japan, Origins and diversity of citrus
Dr. Margaret McFall-Ngai, Carnegie Institution for Science, California, USA, Evolution and diversity of cephalopods
Prof. Oleg Simakov, University of Vienna, Austria, Evolution and diversity of cephalopods
Dr. Joshua Rosenthal, Marine Biological Laboratory, Woods Hole, USA, Evolution and diversity of cephalopods
Dr. Spencer Nyholm, University of Connecticut, Connecticut, USA, Evolution and diversity of cephalopods
Prof. Michele Nishiguchi, University of California Merced, Merced, USA, Evolution and diversity of cephalopods
Dr. Elizabeth Heath-Heckman, Michigan State University, Michigan, USA, Evolution and diversity of cephalopods
Dr. Fernando Fernández-Álvarez, Marine Science Institute of Barcelona ICM-CSIC, Spain, Evolution and diversity of cephalopods

Prof. Davin Setiamarga, National Institute of Technology, Wakayama College (KOSEN), Japan, Evolution and diversity of cephalopods

Prof. Sam Reiter, Computational Neuroethology Unit, OIST, Japan, Evolution and diversity of cephalopods

Dr. Tomoyuki Mano, Computational Neuroethology Unit, OIST, Japan, Evolution and diversity of cephalopods

Dr. Carrie Albertin, Marine Biological Laboratory, Woods Hole, USA, Evolution and diversity of cephalopods

Scholarly Contributions and Creative Productions (by Faculty)

Journal Article

1. Sanchez, G.; Fernández-Álvarez, F. Á.; Bernal, A.; Heath-Heckman, E.; Lami, R.; McFall-Ngai, M.; Nishiguchi, M.; Nyholm, S.; Simakov, O.; Allcock, A. L. L.; Rokhsar, D. S.
Rapid Mid-Cretaceous Diversification of Squid and Cuttlefish Preceded Radiation into Coastal Niches. *Nature ecology & evolution*, 10, 662–676 (2026).
2. Piovani, L.; Gavriouchkina, D.; Parey, E.; Sarre, L. A.; Peijnenburg, K. T. C. A.; Martín-Durán, J. M. M.; Rokhsar, D. S.; Satoh, N.; de Mendoza, A.; Goto, T.; Marlétaz, F.
The Genomic Origin of the Unique Chaetognath Body Plan. *Nature*, 645, 964–973 (2025).
3. Gavriouchkina, D.; Tan, Y.; Parey, E.; Ziadi-Künzli, F.; Hasegawa, Y.; Piovani, L.; Zhang, L.; Sugimoto, C.; Luscombe, N.; Marlétaz, F.; Rokhsar, D. S.
A Single-Cell Atlas of the Bobtail Squid Visual and Nervous System Highlights Molecular Principles of Convergent Evolution. *Nature ecology & evolution*, 9, 1245–1262 (2025).

Scholarly Contributions (by Unit Members*)

Name of Unit Member	Type	Title	Outlet	Year Pub
Sanchez G*, Simakov O, Nyholm S, Nishiguchi M, McFall-Ngai M, Lami R, Heath-Heckman E, Oatley G, Sinclair E, Aunin E, Gettle N	Journal Article	The chromosomal genome sequence of the bigfin reef squid, <i>Sepioteuthis lessoniana</i> d'Orbigny, 1826 and its associated microbial metagenome sequences	Wellcome Open Research	2025
Kimbara R*, Yamauchi S, Kohtsuka H, Miura T	Journal Article	Degeneration of Comb Plates during Larval Stages in a Sessile Platyctenid Ctenophore, <i>Lyrocteis imperatoris</i> (Ctenophore, Platyctenida)	Zoological Science	2025
Otomo Y, Kimbara R*, Oguchi K, Kohtsuka H, Miura T	Journal Article	Reduction of body segmentation in the skeleton shrimp <i>Caprella scaura</i> (Amphipoda: Caprellidae) inferred from comparative internal anatomy of Caprelloidea	The Science of Nature	2026
Yohei Otomo, Kohei Oguchi, Ryosuke Kimbara*, Hisanori Kohtsuka, Toru Miura	Poster Presentation at Conference	Arrangement of internal organs inside the body plan with reduced abdominal segments in a skeleton shrimp, <i>Caprella scaura</i>	The 96th Annual Meeting of the Zoological Society of Japan	2025
Satoshi Kusama, Ryosuke Kimbara*, Osamu Inamura	Poster Presentation at Conference	Post-hatching development and culture methods of firefly squid, <i>Watasenia scintillans</i>	The 2025 Cephalopod International Advisory Council Meeting (CIAC2025)	2025
Yuma Sakurai, Hisanori Kohtsuka, Ryosuke Kimbara*, Toru Miura, Nobuaki Tanaka	Poster Presentation at Conference	Lateralization of retinal structure correlated with visual lateralization in <i>Sepioteuthis lessoniana</i>	The 2025 Cephalopod International Advisory Council Meeting (CIAC2025)	2025

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Ryosuke Kimbara*, Gustavo Sanchez*, Lin Zhang*, Daniel Rokhsar*	Poster Presentation at Conference	Sex identification and developmental mechanism of a male-specific morphologies in immature squids	The 96th Annual Meeting of the Zoological Society of Japan	2025
Yuma Sakurai, Hisanori Kohtsuka, Ryosuke Kimbara*, Toru Miura, Nobuaki Tanaka	Poster Presentation at Conference	Lateralization of retinal structure correlated with behavioral lateralization in Sepioteuthis lessoniana	The 96th Annual Meeting of the Zoological Society of Japan	2025
Ryosuke Kimbara*	Poster Presentation at Conference	Developmental patterning of squid tentacles regulated by Wnt signaling	The 2025 Cephalopod International Advisory Council Meeting (CIAC2025)	2025
Gustavo Sanchez*	Poster Presentation at Conference	Genomic signatures of light organ evolution in bobtail squid	The 2025 Cephalopod International Advisory Council Meeting (CIAC2025)	2025
Gustavo Sanchez*	Presentation at Conference	Comparative analysis of diverse decapodiform genomes reveals rapid order-level cladogenesis at mid-Cretaceous	The 2025 Cephalopod International Advisory Council Meeting (CIAC2025)	2025
Ryosuke Kimbara*, Natsumi Ono, Gustavo Sanchez*, Daniel Rokhsar*	Presentation at Conference	Phylogenetic Assessment of a Morphologically Distinct Octopus Type Coexisting with Octopus sinensis	The 2025 Cephalopod International Advisory Council Meeting (CIAC2025)	2025
Arno Hagenbeek, Gustavo Sanchez*, Fernando Fernandez-Alvarez, Ryosuke Kimbara*, Lin Zhang*, Noriyosi Sato, Daniel Rokhsar*, Filip Husnik	Presentation at Conference	Pelagic bobtail squid harbors a degraded bioluminescent symbiont	The 2025 Cephalopod International Advisory Council Meeting (CIAC2025)	2025
Ryosuke Kimbara*, Gustavo Sanchez*, Lin Zhang*, Daniel S. Rokhsar*	Presentation at Conference	Developmental mechanism of squid specific tentacles	The 26th Annual Meeting of Society for Evolutionary Studies	2025

Outreach Activities [For Unit Members Only]

Aug-2025 Ryosuke Kimbara, Children's School of Science 2025, OIST

Workshops and Seminars [Organized and Hosted by Faculty/Units]

Title	Location	Co-Organizers	Date
Cephalopod International Advisory Council Conference 2025 (CIAC2025)	OIST	Ryuta Nakajima, Daniel Rokhsar	2025
CIAC2025 Pre-conference workshops-Workshop 2: Cryptic biodiversity of cephalopods: state-of-the-art and future trend	OIST	Fernando Á. Fernández-Álvarez, Gustavo Sánchez, Christian Ibañez	2025