FY 2025 Annual Report

Unit Name

Marine Structural Biology Unit
Assistant Professor Oleg Sitsel

Collaborations

Prof. Cheryl Ames, Tohoku University, Japan, N/A

Prof. Atsuko Tanaka, Tohoku University, Japan, N/A

Prof. Timothy Ravasi, OIST, Japan, N/A

Prof. Benjamin Engel, Basel University, Switzerland, N/A

Prof. Matthias Wolf, OIST, Japan, N/A

Dr. Sen-Lin Tang, Academia Sinica, Taiwan, N/A

Dr. Yi-Jyun Luo, Academia Sinica, Taiwan, N/A

Prof. Amy Shen, OIST, Japan, N/A

Prof. David Bourne, James Cook University, Australia, N/A

Prof. Vasili Hauryliuk, Lund University, Sweden, N/A

Prof. Alexander Tøsdal Tveit, The Arctic University of Norway, Norway, N/A

Prof. Markus Basan, Harvard Medical School, USA, N/A

Prof. Alexander Belyy, Groningen University, Netherlands, N/A

Dr. Artem Bonchuk, KAUST, Saudi Arabia, N/A

Prof. David Miller, James Cook University, Australia, N/A

Dr. Estefania Rodriguez, American Museum of Natural History, USA, N/A

Prof. Shunichi Takahashi, University of the Ryukyus, Japan, N/A

Prof. Noriyuki Satoh, OIST, Japan, N/A

Dr. Oliver Schraidt, International Iberian Nanotechnology Laboratory, Portugal, N/A

Dr. Iliona Wolfowicz, International Iberian Nanotechnology Laboratory, Portugal, N/A

Research Personnel

Naohisa Wada, Staff Scientist

Mingjun Xu, Research Unit Technician

Keenan Guillas, Research Unit Technician

Aljona Sitsel, Science and Technology Associate

Simon Corroyer-Dulmont, Postdoctoral Scholar

Iliona Wolfowicz, Visiting Researcher

Oliver Schraidt, JSPS Fellow

Sara Hansen, Visiting Researcher

Alexander Belyy, JSPS Fellow

Chloe Annette Francine Masson, PhD Student

Leonardo Tozetto, PhD Student

Hina Shimabukuro, Research Intern

Oleg Khamitov, Research Intern

Morgan Paige Hernandez, Research Intern

Zhonghui Wen, Research Intern

Yuxin Liu, Visiting Research Student

Scholarly Contributions and Creative Productions (by Faculty)

Journal Article

1. Vinayagam, D.*; Sitsel, O.*; Schulte, U.*; Constantin, C. E.; Oosterheert, W.; Prumbaum, D.; Zolles, G.; Fakler, B.; Raunser, S.

   Molecular Mechanism of Ultrafast Transport by Plasma Membrane Ca2+-ATPases. Nature 2025, 646.
2. Ng’ang'a, P. N. N.; Folz, J.; Kucher, S.; Roderer, D.; Xu, Y.; Sitsel, O.; Belyy, A.; Prumbaum, D.; Kühnemuth, R.; Assafa, T. E.; Dong, M.; Seidel, C. A. M.; Bordignon, E.; Raunser, S.

   Multistate Kinetics of the Syringe-like Injection Mechanism of Tc Toxins. Science advances 2025, 11, eadr2019.

Presentation at Conference

1. Sitsel, O.

   Cryoelectron Tomography - Current State, Challenges, Future Directions + Case Study: The Unusual Secretion Mechanism of Tc Toxins. Tohoku University 2025.
2. Sitsel, O.

   Cryoelectron Tomography - Current State, Challenges, Future Directions. Protein Science Society of Japan 25th annual meeting 2025.
3. Sitsel, O.

   Dissecting the Mysterious Secretion Mechanism of Tc Toxins. FY2024 Cryo-Electron Microscopy Course at OIST 2025.
4. Sitsel, O.

   The Mysterious Secretion Mechanism of Tc Toxins. The 13th Asia Pacific Microscopy Congress 2025 (APMC13) 2025.
5. Sitsel, O.

   Cryoelectron Tomography - Current State, Challenges, Future Directions. OIST-Keio showcase talk series vol. 9 2026.
6. Sitsel, O.

   Cryoelectron Tomography - Current State, Challenges, Future Directions. BINDS cryo-EM course 2025.

Scholarly Contributions (by Unit Members)

Name of Unit Member	Type	Title	Outlet	Publisher
Leonardo Tozetto	Journal Article	High-throughput phenomics of global ant diversity	Nature Methods	Nature

Honors, Awards & Fellowships [By Unit Members Only]

Term 1 2025 - Term 2 2026	Alexander Belyy, JSPS Fellowship, 日本学術振興会外国人研究者招へい事業外国人特別研究員, 2025 - 2026, 独立行政法人日本学術振興会, 日本学術振興会外国人研究者招へい事業外国人特別研究員 [Fiscal Year: 2025]

Other Institutional Service

Term 1 2025 - Ongoing	Curriculum and Examinations Committee, (University) [Fiscal Year: 2025]
Term 1 2025 - Ongoing	Student External Funding Nomination Committee, (University) [Fiscal Year: 2025]
Term 3 2025 - Ongoing	Specification Committees, (University) [Fiscal Year: 2025]

Outreach Activities [For Unit Members Only]

Term 3 2025	Keenan Guillas, OIST booth at Osaka Kansai EXPO 2025: "Science Expo: Connecting Me and the Future", COI-NEXT [Fiscal Year: 2025]
Term 2 2025	Leonardo Tozetto, OIST Science Festival: Exploring the wonders of energy!, OIST Community Relations [Fiscal Year: 2025-02-01]
Term 2 2025	Leonardo Tozetto, Ishikawa Prefectural Nanao High School, OIST Science Education Outreach [Fiscal Year: 2025-01-29]
Term 2 2025	Leonardo Tozetto, Jscience Research Joint Presentation for SSH School, OIST Science Education Outreach [Fiscal Year: 2025-01-29]

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

Speaker Name(s)	Title	Location	Co-Organizers	Date
Katherine Lau	Unlocking the power of cryoelectron tomography through the MIMAS workflow	OIST		2025
Kathrin Rudolph	Revealing ultrastructural details in biological specimens by plasma FIB-SEM imaging	OIST		2025
Oleg Sitsel	OIST – WPI-AIMEC Joint Workshop	OIST	OIST, Tohoku University, JAMSTEC	2025
Stefan Raunser	Unlocking the secrets of heart muscle structure	OIST		2025
Giovanni Consoli	Structural insights into far-red adapted photosynthesis	OIST		2025
Oleg Sitsel	Electron Microscopy Course 2026	OIST	OIST	2025
Rotating speakers	StrucShare monthly meeting series	OIST	Simon Corroyer-Dulmont, Sara Hansen	2025