

List of Dissertation Abstract (Department of Natural Environment)

Name	Supervisor	Title	Abstract
Li YiNan	nakamura tatuo	Analysis of ion transport using a fluorescent sensor to visualize specific ions in plant cytoplasm	In order to develop high iodine crops that can solve iodine deficiency diseases, it is necessary to elucidate the dynamics of transport. I am using the fluorescent sensor protein YFP(QL)-CFP to establish a method for analyzing I <sup>-</sup> transport and to elucidate its mechanism. In our experiments, we inferred that the transport of I <sup>-</sup> is mediated by the NO <sub>3</sub> transport pathway using a protoplast transient expression system. We also observed the transport activity of AtCLCa and AtCLCb for I <sup>-</sup> . In addition, we generated recombinant plants expressing fluorescent proteins for the analysis of physiology at the individual plant level.
Kodaira Takeru	Shimode Shinji	Diversity and Vertical Distribution of Collodaria (Radioliaria) in Sagami Bay, Japan	There are many unresolved aspects of the taxonomy and ecology of the Collodaria, Radiolaria and even the species that occur in the ocean around Japan are largely unknown. In this study, we conducted a survey in Sagami Bay to gain knowledge on the diversity and vertical distribution, and found that the order is concentrated near the sea surface, that the depth of distribution is controlled by buoyancy adjustment, and that the depth of distribution varies depending on the degree of growth.

KONDO AYAMI	OGATA SHINICHI	Approach to elucidate the molecular mechanism of testicular teratoma development by Embryonal carcinoma cells (EC cell) culture system	Testis teratoma is an intractable disease that develops in the testis and develops when germ cells in the embryonic period acquire pluripotency. However, no clear EC cell marker (Embryonal Carcinoma cells) is known, and the molecular mechanism by which germ cells are converted into pluripotent cells is still unknown. Therefore, in this study, we showed that CAR4 is an EC cell marker by using single cell gene expression analysis (single cell RNA-seq, scRNA-seq) and EC cell culture system.
Mochizuki Manabu	Maiko Kagami	Community structure of aquatic fungi analyzed by comparing 50 dam lakes across Japan	Aquatic fungi play an important role in the material cycle of water bodies. However, the mechanisms that determine the community structure of aquatic fungi are unknown. In this study, we conducted a comparative analysis of aquatic fungal community structure at 50 dam lakes in Japan using DNA metabarcoding techniques. We found that the determinants of community structure differ between fungi and chytrid, and that parasitic chytrid fungi communities are characterized by phytoplankton communities.  Translated with <a href="http://www.DeepL.com/Translator">www.DeepL.com/Translator</a> (free version)