Division of Biological Science and Technology	Research field	Plant Physiology and Biochemistry	Lab. ID BS04
Laboratory web site	http://photon.w3.kanazawa-u.ac.jp/ https://nishiuchitakumi.com/		

Research subjects

The cyanobacterium Nostoc commune adapts to terrestrial environmental conditions and has a cosmopolitan distribution on the Earth. In its natural habitats, N. commune forms visually conspicuous colonies that consist of extracellular matrix with filamentous cells embedded inside. N. commune colonies are subjected to frequent cycles of desiccation and wetting. The desiccated colonies show little to no metabolic activity, yet they retain the ability to grow for more than 100 years. Upon rehydration, N. commune cells rapidly recover respiration and photosynthesis. This phenomenon is termed anhydrobiosis. We are investigating molecular mechanisms of anhydrobiosis using N. commune that is a prokaryotic model anhydrobiote with oxygenic photosynthetic capabilities in vegetative cells and does not differentiate into akinetes (spores).

Master/Doctor course: Education policy, curriculum, typical activity in the laboratory

We have Journal Club, Progress Report and Lab Meeting weekly. You have to report your progress weekly to your adviser. Presentation at a meeting is required for a graduate student and a PhD candidate must be prepare a draft of publication.

Daily life in the laboratory, etc.

Message or comments by the laboratory faculty staffs

First, let's clear up a common misconception. You are not here to help me with my research. Just the opposite -- I'm here to help you with yours. As you gain experience in the lab, you will take up an increasing degree of autonomy and control over your project. You are encouraged to come to ask an advice immediately when you have a trouble to be solved. Mistakes may happen while doing experiments. But, you can turn even these situations into positive experiences. The ability to successfully troubleshoot (recognizing the problem, arriving at a strategy to fix it, and devising a course of action to avoid it again) is a valuable commodity in the workforce. You will bear primary responsibility for moving the project forward. Needless to say, you will probably never reach a point (here or beyond) where you no longer need technical help or advice as to direction, and these will be offered in abundance. But the ultimate responsibility and the ultimate rewards will be yours. Be aware that working in lab is not like working in a lab for a course. The goal of research is not to teach you techniques but rather to invite you into the greater scientific community. (By Dr. Jeff Elhai at VCU and Dr. Ann Marie Daniel at Penn State,)

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