

The Seventh Okazaki Biology Conference "The Evolution of Symbiotic Systems"

Organizer: Masayoshi Kawaguchi (NIBB)

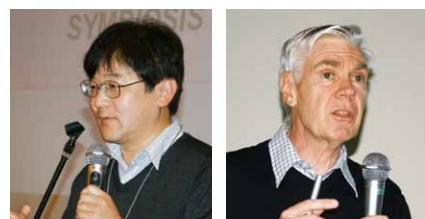
Co-Organizer: James Lake (UCLA)

January 11 (Mon)-14 (Thu), 2010

Symbiosis refers to close and often long-term interactions between species. These interactions involve dynamic changes in the genomes, metabolisms, and signaling networks of the symbiotic partners. A unified understanding of these interactions is required when studying symbiotic organisms. To emphasize the enormous variety of symbiotic consortia and the underlying commonalities that relate these systems, the 7th Okazaki Biology Conference (OBC) on "The Evolution of Symbiotic Systems", was held in January at YAMAHA Resort Tsumagoi, Kakegawa. At the conference we had 35 participants, including 13 researchers from abroad. Following a plenary lecture by James Lake, a co-organizer of the conference, we had 31 research presentations that included 3 talks on newly developing fields given by young scientists. The topics were fantastically diverse from an early prokaryotic endosymbiosis, the evolution of plastids -including the apicoplast of parasitic human malaria, diversity of cultivable and uncultivable endosymbionts, partner shifts in bacterial and mycorrhizal symbioses, interdependent genomes that generate evolutionary novelty, marine symbioses from reef-building corals to crabs that live on sea-floor hydrothermal deposits, plant-pollinator interactions, insect-microbe interactions in aphids and termites, plant-microbe interactions using model legumes, and artificial symbiotic systems. Artificial systems composed of a small set of living organisms looked very promising because

they can reduce complexity and provide a platform to address many important questions about natural systems, for example, what are the potential origins of symbioses? What determines the persistence of symbioses? Participants very much enjoyed the discussions and the opportunity to interact with researchers from different fields of symbiosis study. After the conference, six topics from among these various subjects were introduced as a Multi-author Review in the international journal Cellular and Molecular Life Sciences.

One of the important aspects of symbiosis is the generation of novel adaptive traits through cooperation. Working together, symbiotic organisms can sometimes accomplish biological feats that neither can achieve alone. We hope that this conference will trigger new integrated symbiosis research that achieves what none of the single aspects can achieve alone.



Organizer and Co-organizer



Speakers

Arnold, Michael L. (Univ. Georgia), Baldwin, Ian T. (Max Planck Inst. Chem. Ecol.), Bordenstein, Seth R. (Vanderbilt Univ.), Delwiche, Charles (Univ. Maryland), Engel, Annette Summers (Louisiana State Univ.), Lake, James (UCLA), Norris, Dale M. (Univ. Wisconsin), Reddick, Lovett Evan (Univ. Tennessee), Rumpho, Mary E. (Univ. Maine), Sato, Shigeharu (MRC Natl. Inst. Med. Res.), Shou, Wenying (Fred Hutchinson Cancer Res. Center), Weis, Virginia M. (Oregon State Univ.)
Fukatsu, Takema (AIST), Hayashi, Makoto (Natl. Inst. Agrobiol. Sci. (NIAS)), Hongoh, Yuichi (Tokyo Inst. Tech.), Hosoda, Kazufumi (Osaka Univ.), Jenke-Kodama, Holger (Okinawa Inst. Sci. Tech.), Kawaguchi, Masayoshi (NIBB), Kucho, Ken-ichi (Kagoshima Univ.), Maruyama, Tadashi (Jap. Agency Marine-Earth Sci. Tech. (JAMSTEC)), Minamisawa, Kiwamu (Tohoku Univ.), Nakajima, Toshiyuki (Ehime Univ.), Okazaki, Shin (Nara Women's Univ.), Saeki, Kazuhiko (Nara Women's Univ.), Shigenobu, Shuji (NIBB), Shinzato, Chuya (Okinawa Inst. Sci. Tech.), Suganuma, Norio (Aichi Univ. Edu.), Takabayashi, Junji (Kyoto Univ.), Takeda, Naoya (NIBB), Tanaka, Kan (Chiba Univ.), Yokoyama, Jun (Yamagata Univ.), Yamaguchi, Haruyo (Univ. Tsukuba)