

MICROBIAL OCEANOGRAPHY

ECODIM V 2008

ECOLOGY & DIVERSITY OF MARINE MICROORGANISMS

January 7 – 26, 2008, at the Marine Biological Station Dichato of the University of Concepción, Chile

- Lectures (L) and Evening Sessions will take place in the Ignacio Molina Lecture room in the Estacion de Biología Marina at Dichato (phone ++56-241-683033), unless stated otherwise in the program.
- The entire course will be taught in English. You will have to make your presentations in English and to write the contents of the poster in English as well.
- The course minisymposium on “Interaction between Metals and Microbes” (special program) will take place on Friday, January 18, at the Auditorium Claudio Gay, Faculty of Natural and Oceanographic Sciences, at the main campus of the University in Concepcion. A bus transport to Concepcion and back will be organized by the course. The minisymposium will be open to non-course participants as well.
- Housing is available for all course participants and instructors in the Guest House at the Dichato Station (phone ++56-41-2683033) or at the Cabañas El Mirador, Daniel Vera 1440 (phone and fax: ++56-41-2683036). Breakfast and dinner will be served at the Guest House.
- Lectures last 40 – 50 minutes and are followed by extended discussion periods on the topics covered. The lecturers are
 - week 1: Osvaldo Ulloa, Kurt Hanselmann
 - week 2: Edward DeLong, Mónica Vásquez, Osvaldo Ulloa, Kurt Hanselmann
 - week 3: Daniel Vaultot, Bernardo Gonzáles, Kurt HanselmannOn-site seminar speakers if available
- If the lecturers agree we will make their lecture slides available on the Internet (password protected). Each student will receive personalized access codes.
- Course topics:
 - week 1: Concepts of microbial oceanography, sampling cruise, introduction to lab work, defining interests and project work, homework
 - week 2: Case studies illustrating ongoing research in microbial oceanography and ecology of microorganisms; time for paper preparation
 - week 3: Diversity of marine microorganisms, phylogenetics and ecosystems modeling; your paper presentations, results of laboratory work, exam
- The sampling cruise with the RV Kay Kay II is scheduled to take place on Wednesday, January, 9 in 2 groups, for group 1 in the morning, group 2 in the afternoon

- Laboratory work will be carried out in groups in the Dichato Oceanography Laboratories under the supervision of Silvana A. Collado Fabbri and Rodrigo de la Iglesia. We intend to cover the following techniques:
 1. Sampling for planktonic and sedimentary community analyses and enrichments
 2. Physical and chemical characterization of the water column (some data will become available from time series measurements and from ARGO floats in the Eastern South Pacific OMZ <http://www.omz.udec.cl>)
 3. Characterization of the suspended particles (flow cytometry, phase contrast and fluorescence microscopy)
 4. Culturing of eukaryotic and prokaryotic microorganisms. Defining and designing media for growth
 5. Molecular phylogenetics (DNA extraction, PCR, cloning, plasmid extraction, sequencing, if possible)
 6. BLAST, phylogenetic tree building and community modeling

- The microscopes are installed in the main building

- Computer exercises on bio-thermodynamics, community modeling and phylogenetics will be offered in groups in the computer lab

- Each student will participate in a small research project, which will contribute towards the course's poster presentations

- Students are asked to present their regular project work, which they carry out "at home" in a short presentation that is followed by a discussion. Monday, Tuesday and Thursday evening of week 1 are reserved for the student presentations

- The course directors are asked by UdeC to evaluate student performance and give credit for fulfilling the course goals. Full credit requires:
 - a) giving a 15 minute presentation on the work you are presently involved in at your home institution (at the beginning of the course).
 - b) presenting the essence of a published scientific paper, selected by you, in 25 minutes (incl. discussion) in English and being able to respond to questions related to it. The paper should be relevant to the course topics (microbiology, ecology, diversity) and your particular scientific interests (counts as individual exam at the end of the course)
 - c) the presentation of the course research results (counts as an individual and group effort)
 - d) the contribution to the poster (group effort)