

ECODIM-VIII, 2014, Ecology and Diversity of marine Microorganisms

Course Organization

- Pick-up** International participants (students and instructors), and Chilean participants from other regions, will be met at the airport or bus station in Concepción in accordance to the arrival information that was provided by Mónica Sorondo (in case of delays or emergencies please contact Mónica via the cell phone number 09-6821550)
- Housing and Meals** Available for all lecturers and students from Sunday evening, January 5 to Saturday morning, January 25 at the [Cabañas El Mirador](#), Daniel Vera 1440, Camino a Pingüeral (phone and fax: ++56 41 2683036; cell phone 09-6608 5155). Rooming lists will be posted by Mónica Sorondo.
Breakfast and Dinner will be served for all at Cabañas El Mirador, lunch at a nearby restaurant. There are a couple of places near the Station (Tia Maigo and Don Mino) for lunch.
Internet access with password 0123456789
- First Get-together** Sunday, January 5 at 19.30 at Cabañas El Mirador. Pizza and drinks will be available.
- Course Program** The course starts Monday morning, January 6 at 08.30 in the Estación de Biología Marina at Dichato (phone ++ 56 41 2683033)
- Course Contents** Lectures and Evening Sessions will take place in the Main Lecture room at the Estación de Biología Marina. Microscopy, Computer Exercises and Laboratory work in specially equipped labs, unless stated otherwise in the program.
- Language** The entire course will be taught in English. Students will have to make their presentations in English and write the contents of the project proposal and the poster in English.
- Symposium** The course Symposium on "The Microbial Tree of Life and Beyond: The Legacy of Carl Woese (1928-2012)" (special program) will take place on Friday, January 10, at the Auditorium Claudio Gay, Faculty of Natural and Oceanographic Sciences, at the main campus of the University in Concepción. A bus transport to Concepción and back will be organized by the course (departure in Dichato at 07.00 a.m.). The symposium is open to non-course participants as well.
- Lectures** last 40 minutes and are followed by extended discussion periods on the topics covered. The lecturers are listed on the course program of week 1, which will become available on the course internet site.
If the lecturers agree we will make their lecture slides available on the Internet course folder. Internet access with password 81494400k
- Technical Assistants** The TAs for the entire course are: Adriana Lopes Dos Santos (CNRS, UMR 7144, Station Biologique, Roscoff, FRANCE) and Alvaro Plominsky (Laboratorio de Oceanografía Microbiana Depto. de Oceanografía Universidad de Concepcion, CHILE). Both are former ECODIM students
- Course Topics**
Week 1: Concepts of microbial oceanography, sampling cruise, diversity of marine microorganisms, incl. viruses, introduction to lab work, defining interests and project work, student presentations, project proposal preparation. Symposium on "The Microbial Tree of Life and Beyond: The Legacy of Carl Woese (1928-2012)" at the Faculty of Natural and Oceanographic Sciences, main campus of UdeC.
Week 2: Metagenomics, phylogeny, biothermodynamics, picoplankton, community analysis. Case studies illustrating ongoing research in microbial oceanography and ecology of microorganisms, computer exercises, project proposal presentation.
Week 3: Population genomics, ecosystem evolution, N- and S-cycling, flow cytometric, molecular and enrichment techniques for community analysis; presentation of results of laboratory work, designing poster
- Field Sampling** The sampling is scheduled to take place on Tuesday, January 7 in 2 groups: for groups A & C in the morning, groups B & D in the afternoon.
- Laboratory Work** will be carried out in groups in the laboratories of the Estación de Biología Marina under the supervision of the instructors and TAs. We intend to cover the following techniques:
1. Sampling for planktonic and sedimentary communities; analyses and enrichments of microorganisms, incl. viruses
2. Physical and chemical characterization of the water column (CTD, chemical speciation). Some data are available from time series measurements and from ARGO floats in the Eastern South Pacific OMZ <http://www.omz.udec.cl/?op=argos>
3. Characterization of suspended particles (cytofluorometry, 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, environmental libraries and sequencing, community modeling
7. Analyzing metagenomic sequence data

Microscopy

The microscopes are installed in the main building of the Estación de Biología Marina.

Computer Exercises

on metagenomics, phylogenetics, biogeochemistry and bio-thermodynamics will be offered in groups in the computer lab at the Estación de Biología Marina. Please take your own laptop computer, if you have one.

Research Projects

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

Student 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 (15 minutes each). Monday, Tuesday, Thursday and Saturday evenings of week 1 are reserved for the student presentations. During the first and second week we will instruct how to develop research proposals and present the outcome to the entire course towards the end of week 2.

Evaluation

The course directors are asked by UdeC to evaluate student performance and give credit for fulfilling the course goals. It is the student's obligation, however, to get the credits accepted by his / her home institution. It is advisable to clarify this point before the course. Students will receive a certificate that documents the fulfillment of the credit requirements. Full credit requires:

- a) Giving a 15-minute presentation on the work, you are presently involved in at your home institution (during week 1 of the course) (15%).
- b) Developing and presenting an innovative scientific research proposal, selected by each working group of 3 students, in 40 minutes (incl. discussion) in English and being able to respond to questions related to it. The project proposal should be relevant to a course topic (microbiology, ecology, diversity, genomics) and the particular scientific interests of the working group but it has to be different from your project work "at home" (counts as individual exam at the end of the course) (30%). The presentations of the project proposals will take place towards the end of week 2.
- c) The presentation of the course research results (counts as an individual and group effort) (25%).
- d) The contribution to the poster (group effort) (30%).

Course Internet Site

Newest versions of the course information are available under <https://www.olat.uzh.ch/olat/url/RepositoryEntry/9151610880/CourseNode/83591083552889>. Personal login and password for access to the course site were sent to you via the e-mail address, which you listed on your application form. We will use this site to upload all pertinent information regarding the course. Also outlines of the daily work will become available on the course internet site.

ECODIM on Facebook

Facebook fans are encouraged to update the site while the course is going on <https://www.facebook.com/ecodim2014?ref=hl>

Poster

We aim at summarizing the high quality course research work by producing posters. You are invited to present these posters at your home institution and – under certain conditions - at national and international scientific meetings and send valuable feedback and suggestions to the course organizers. Examples of posters from earlier courses can be seen in the "Abstract / Poster" folder.

Eighth Latin American Microbiology Postgraduate Course on "Ecology and Diversity of marine Microorganisms", (ECODIM-VIII), offered by the Austral Summer Institute, University of Concepción & the Pontificia Universidad Católica de Chile, at Dichato, Chile, January 6 - 26, 2014