



Austral Summer Institute XV (ASI XV) Organic chemistry, genomics and equations as tools to understanding the oceans

Department of Oceanography & COPAS Sur-Austral Program
University of Concepción, Chile
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Course: Physiological responses of marine organisms to environmental changes from a genomics perspective

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Marine environments are continually changing in response to both natural processes and human activities, both having direct physiological impacts on marine organisms. This course will explore the surprising similarities and unique differences in the physiological response of diverse organisms. The main focus will be on functional responses to system stressors; however, the course will also explore how new discoveries in epigenetics is providing insight into phenotypic plasticity and evolutionary implications.

A core component of this course will be hands on tutorials on examining high-throughput sequencing data. Specifically, transcriptome (RNA-seq) data from experiments where marine organisms are exposed to environmental change will be analyzed. Bioinformatic instruction will include modules on gene annotation, differential gene expression, and variant detection. There will be an emphasis on open science practices including the use of electronic lab notebooks.