

Student Mini-Symposium on

Discoveries in Marine Microbiology

A one-day Symposium offered by the International Course on the
“Ecology and Diversity of Marine Microorganisms (ECODIM IV)”
and the “6th Austral Summer Institute” of the
Departamento de Oceanografía, Universidad de Concepción

Saturday, January 21, 2006

**Ignacio Molina Lecture Room
at the Estación de Biología Marina, Dichato,**

Symposium Program - Exam Paper Presentations

(Copies of the papers are available in the shared course folder in OLAT)

08.30 **Introduction**

Recent Developments and Discoveries in Microbial
Oceanography

OSVALDO ULLOA
Concepción, Chile

Session 1: New organisms and processes discovered in marine habitats

Convener: Avy Bernales

08.45 **Discovery of the Novel Candidate Phylum
“*Poribacteria*” in Marine Sponges**

APPLIED AND ENVIRONMENTAL MICROBIOLOGY
70 (2004), 3724–3732
LARS FIESELER, MATTHIAS HORN, MICHAEL WAGNER,
AND UTE HENTSCHEL

JENNYFER MORA
Coastal Marine Research
Institute INVEMAR, Santa
Marta, Magdalena,
COLOMBIA

- 09.10 **Reverse Methanogenesis: Testing the Hypothesis with Environmental Genomics** SCIENCE 305 (2004) 1457 – 1462
STEVEN J. HALLAM, NIK PUTNAM, CHRISTINA M. PRESTON, JOHN C. DETTER, DANIEL ROKHSAR, PAUL M. RICHARDSON, EDWARD F. DELONG
MARTHA HENGST
Pontificia Universidad Católica, Departamento de Genética Molecular y Microbiología, Facultad de Ciencias, Santiago, CHILE
- 09.35 **Isolation of an autotrophic ammonia-oxidizing marine archaeon** NATURE 437 (2005) 543 - 546
MARTIN KÖNNEKE, ANNE E. BERNHARD, JOSÉ R. DE LA TORRE, CHRISTOPHER B. WALKER, JOHN B. WATERBURY, DAVID A. STAHL
CARLOS ARANDA
Universidad de Los Lagos, Centro de Investigación y Desarrollo en Recursos y Ambientes Costeros, i-mar, Puerto Montt, CHILE
- 10.00 **Coffee Break**

Session 2: Microbial regulation of ocean processes

Convener: **Maria Constanza Hozbor**

- 10.25 **Viruses as Regulators of Nutrient Cycles in Aquatic Environments** MICROBIAL BIOSYSTEMS: NEW FRONTIERS, PROCEEDINGS OF THE 8TH INTERNATIONAL SYMPOSIUM ON MICROBIAL ECOLOGY (2000), BELL CR, BRYLINSKY M, JOHNSON-GREEN P (EDS), ATLANTIC CANADA SOCIETY FOR MICROBIAL ECOLOGY, HALIFAX, CANADA. S.W. WILHELM AND C.A. SUTTLE
GISELLE PARNO GUIMARAES
Universidade Federal Fluminense, Rio de Janeiro, BRAZIL
- 10.45 **Cyanophages Infecting the Oceanic Cyanobacterium *Prochlorococcus*** NATURE 424 (2003) 1047 - 1051
MATTHEW B. SULLIVAN, JOHN B. WATERBURY & SALLIE W. CHISHOLM
MARCELO GUTIERREZ
Universidad Concepción Departamento de Oceanografía, Centro Copas, CHILE
- 11.10 **Microbial Modulation in the Biomass and Toxin Production of a Red-tide Causing Alga** MARINE POLLUTION BULLETIN 51 (2005) 1018–1025
T.L. ZHENG, J.Q. SU, K. MASKAOUI, Z.M. YU, Z. HU, J.S. XU, H.S. HONG
IVAN CALDERON
Universidad Santiago de Chile, Laboratorio de Microbiología Molecular, Facultad de Química y Biología, Santiago, CHILE

11.35 **Novel Forms of Structural Integration between Microbes and a Hydrothermal Vent Gastropod from the Indian Ocean**

APPLIED AND ENVIRONMENTAL MICROBIOLOGY
70 (2004) 3082–3090
SHANA K. GOFFREDI, ANDERS WARÉN, VICTORIA J. ORPHAN, CINDY L. VAN DOVER,
AND ROBERT C. VRIJENHOEK

MARIA ALEXANDRA GARCIA
Centro de Biofísica y
Bioquímica, IVIC,
VENEZUELA

12.00 **Lunch break**

Session 3: New looks at microbial productivity in the ocean

Convener: Ivan Calderon

13.00 **Contribution of *Archaea* to Total Prokaryotic Production in the Deep Atlantic Ocean**

APPLIED AND ENVIRONMENTAL MICROBIOLOGY
71 (2005) 2303–2309
GERHARD J. HERNDL, THOMAS REINTHALER, EVA TEIRA,
HENDRIK VAN AKEN, CORNELIUS VETH, ANELIE
PERNTHALER, AND JAKOB PERNTHALER

LUCY BELMAR
Universidad de
Concepción, CHILE

13.30 **Relationship between Bacterioplankton Richness, Respiration, and Production in the Southern North Sea**

APPLIED AND ENVIRONMENTAL MICROBIOLOGY
71 (2005) 2260–2266
THOMAS REINTHALER, CHRISTIAN WINTER, AND
GERHARD J. HERNDL

MARIA CONSTANZA HOZBOR
Instituto Nacional de
Investigación y Desarrollo
Pesquero (INIDEP), Mar
del Plata - ARGENTINA

13.55 **Contribution of Aerobic Photoheterotrophic Bacteria to the Carbon Cycle in the Ocean**

SCIENCE 292 (2001) 2402 - 2405
ZBIGNIEW S. KOLBER, F. GERALD PLUMLEY, ANDREW S.
LANG, J. THOMAS BEATTY, ROBERT E. BLANKENSHIP,
CINDY L. VANDOVER, COSTANTINO VETRIANI, MICHAL
KOBLIZEK, CHRISTOPHER RATHGEBER, PAUL G.
FALKOWSKI

HEATHER BOUMAN
Universidad de
Concepción, Programa
Regional de Oceanografía
Física y Clima, CHILE

Session 4: Biotechnological applications from and for marine microbiology

Convener: Marcelo Gutierrez

14.20 **Electrode-Reducing Microorganisms that Harvest Energy from Marine Sediments**

SCIENCE, 295 (2002) 483 – 485
DANIEL R. BOND, DAWN E. HOLMES, LEONARD M. TENDER, DEREK R. LOVLEY

GERDARD JESSEN
Universidad de Concepción, Centro Copas, CHILE

14.45 **Genome Sequencing in Microfabricated High-Density Picolitre Reactors**

NATURE 437 (7057), (2005) 376 – 380

MARCEL MARGULIES , MICHAEL EGHOLM, WILLIAM E. ALTMAN, SAID ATTIYA, JOEL S. BADER, LISA A. BEMBEN, JAN BERKA, MICHAEL S. BRAVERMAN, YI-JU CHEN, ZHOUTAO CHEN, SCOTT B. DEWELL, LEI DU, JOSEPH M. FIERRO, XAVIER V. GOMES, BRIAN C. GODWIN, WEN HE, SCOTT HELGESEN, CHUN HE HO, GERARD P. IRZYK, SZILVESZTER C. JANDO, MARIA L. I. ALENQUER, THOMAS P. JARVIE, KSHAMA B. JIRAGE, JONG-BUM KIM, JAMES R. KNIGHT, JANNA R. LANZA, JOHN H. LEAMON, STEVEN M. LEFKOWITZ, MING LEI, JING LI, KENTON L. LOHMAN, HONG LU, VINOD B. MAKHIJANI, KEITH E. MCDADE, MICHAEL P. MCKENNA, EUGENE W. MYERS, ELIZABETH NICKERSON, JOHN R. NOBILE, RAMONA PLANT, BERNARD P. PUC, MICHAEL T. RONAN, GEORGE T. ROTH, GARY J. SARKIS, JAN FREDRIK SIMONS, JOHN W. SIMPSON, MAITHREYAN SRINIVASAN, KARRIE R. TARTARO, ALEXANDER TOMASZ, KARI A. VOGT, GREG A. VOLKMER, SHALLY H. WANG, YONG WANG, MICHAEL P. WEINER, PENGGUANG YU, RICHARD F. BEGLEY & JONATHAN M. ROTHBERG

JENNY BLAMEY
Fundación Científica y Cultural Biocencia, Santiago, CHILE

15.10 **Coffee and Cookies**

Session 5: Microbial involvement in geochemical cycling, present and past

Convener: Gerhard Jessen

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| 15.35 | Accelerated Dissolution of Diatom Silica by Marine Bacterial Assemblages | NATURE 397 (1999) 508-512
KAY D. BIDLE & FAROOQ AZAM | AVY BERNALES
Institute del Mar de Peru,
IMARPE, Esquina Gamarra
y General Valle S/N
Chuchito, Callao, Lima,
PERU |
| 16.00 | Microbial Manganese and Sulfate Reduction in Black Sea Shelf Sediments | APPLIED AND ENVIRONMENTAL MICROBIOLOGY
66 (2000) 2888–2897
BO THAMDRUP, RAMON ROSSELLO-MORA, RUDOLF
AMANN | EDGARDO
SANTANDER
Universidad Arturo Prat,
Departamento de Ciencias
del Mar,
Iquique, CHILE |
| 16.25 | The Paleome: A Sedimentary Genetic Record of Past Microbial Communities | ASTROBIOLOGY 5 (2005) 141-153
FUMIO INAGAKI, HISATAKE OKADA, ALEXANDRE I. TSAPIN,
KENNETH H. NEALSON | JUAN ANTONIO
UGALDE
Universidad de Chile,
Laboratorio de
Bioinformática y
Matemática del Genoma,
CMM, Santiago, CHILE |
| 16.50 | General Discussion on and evaluation of the papers presented during the minisymposium | | |
| 17.10 | Summary and Outlook | Challenges for the Future | Kurt Hanselmann
Zürich, Switzerland |
| 17.20 | End of Symposium | | |