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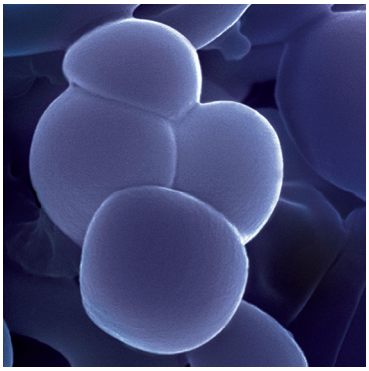


JOINING FORCES ACROSS DISCIPLINES TO EXPLORE MICROBIAL LIFE

№ 1·2015

# New PhD student working on antibiotic resistance

Another CIME international recruitment, Anthony Prandina, a new PhD student affiliated with CIME and the School of Pharmacy. Photo: Ole Andreas Økstad

Anthony Prandina is the third PhD student to be newly recruited for CIME. Anthony comes to Oslo from the University of Pharmacy in Lyon, France. Welcome to CIME, Anthony!

Anthony Prandina (27), PhD student from France working in the group of Pål Rongved, starting from the 8th of September 2014. Anthony completed his MSc in Pharmacy in September 2014 at the University of Pharmacy Claude Bernard Lyon 1 (UCBL), France, where he also did his bachelors degree.

He completed a five-month Erasmus master student internship in the Rongved group in 2013.

The title of his master thesis was “Analytical development and biopharmaceutics”. His scientific interests are drug design, pharmaceutical chemistry, medicinal chemistry, and biological evaluation of potential new drug candidates.

The title of his PhD project is “New zinc-chelating agents for medical use - Combating Antibiotic Resistance”.

His supervisors are Pål Rongved (main), Alexander Åstrand and Hedvig M. Egeland Nordeng at the UiO and Marc Le Borgne and Sylvie L. Radix at UCBL.

Anthony is also a keen guitar player!

**CIME WIPS SEMINAR SERIES**
You are most welcome to the CIME WIPs seminar series, spring 2015.
Time: Fridays 08:30. Venue: room 4213, IBV, Kristine Bonnevie (Biology building).

Please see CIME web site http://www.mn.uio.no/ibv/english/research/groups/cime/ and/or sign up for the CIME seminars email list: cime-seminars@mn.uio.no for posting of seminars.

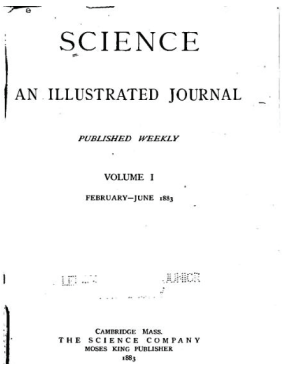
# CIME PhD course: Bioinformatics analyses of amplicon sequences


A new Bioinformatics PhD course will be organized by CIME personell this spring: BIO9905MERG1 - Bioinformatics for Metagenomic Analyses and Environmental Sequencing

By Konrad Förstner (Own work) [CC0], via Wikimedia Commons

This spring semester (16-20 March), an intensive PhD course dealing with bioinformatics analyses of amplicon sequences and metagenomics data will be organized at the University of Oslo by CIME personell. The following programs, designated to process and analyse high throughput DNA sequences from environmental samples, will be presented in lectures and/or hands on sessions: QIIME, Mothur, SWARM, VSEARCH, OBItools, METAXA, ITSx, and MEGAN. Both in-house experts as well as renowned experts from abroad will teach at the course. In addition, case studies dealing with metagenomics analyses will be presented. Although the course is primarily given as a PhD course, it will be possible for other CIME personell to follow the course..

**CONTACT INFORMATION**
For more information, please contact Håvard Kauserud at haavarka@ibv.uio.no


SCIENCE

AN ILLUSTRATED JOURNAL

PUBLISHED WEEKLY

VOLUME I

FEBRUARY–JUNE 1883

CAMBRIDGE MASS.
THE SCIENCE COMPANY
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1883

**ENVIRONMENTAL MICROBIAL DIVERSITY JOURNAL CLUB**
The CIME journal club is focusing on microbial diversity

If you want to be added to the e-mail list, contact: Marit M. Bjorbækmoe

For further information about CIME journal clubs, please visit:
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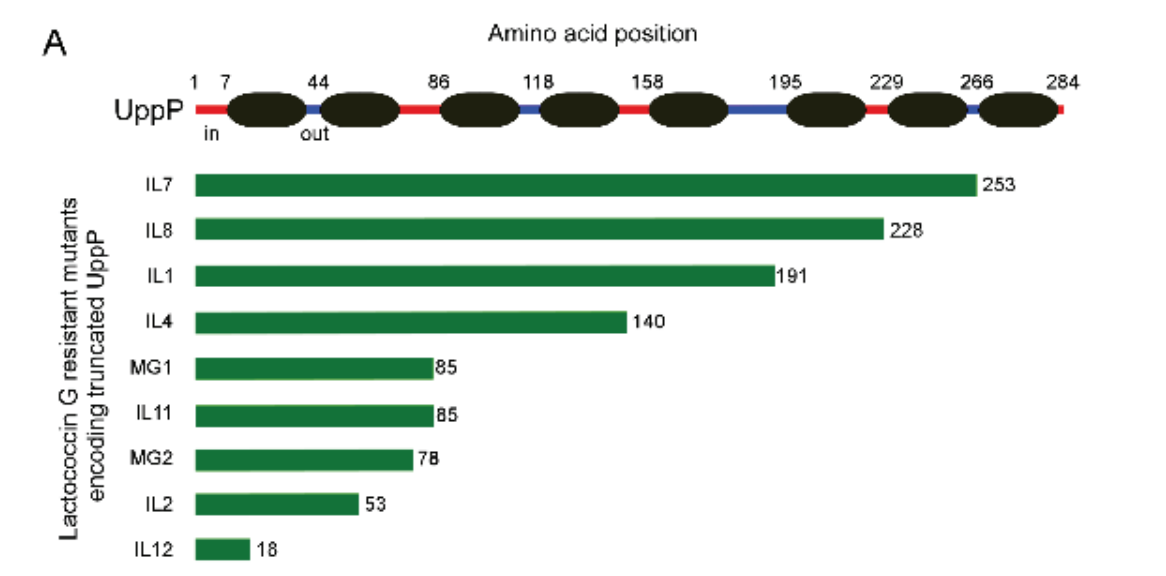
# Novel approach to identify cell surface receptors for antimicrobial peptides




Schematic overview of the mutants containing truncated uppP gene products due to frameshift mutations or introduction of stop-codons.

A novel approach to identify cell surface receptors for antimicrobial peptides has been established by the groups of Tom Kristensen and Jon Nissen-Meyer in CIME, and highlighted in Molecular Microbiology.

Antimicrobial peptides called bacteriocins are produced by bacteria and function by killing other bacteria. Although they are thought to kill cells by receptor-mediated mechanisms, the targets of most bacteriocins are unknown.

Recent work from the groups of Tom Kristensen and Jon Nissen-Meyer identified the receptor for the class IIb bacteriocin lactococcin G as undecaprenyl pyrophosphate phosphatase; a membrane protein involved in peptidoglycan synthesis. This exciting discovery was made using an unbiased, forward genetic screen followed by whole genome sequencing of resistant mutants. Co-authors included Camilla Oppegård (IBV) and collaborators at the Norwegian University of Life Sciences and the University of Groningen, Netherlands.
The work is published in Molecular Microbiology and was highlighted for its importance and novelty in an accompanying MicroCommentary.

Sensitivity to the two-peptide bacteriocin lactococcin G is dependent on UppP, an enzyme involved in cell-wall synthesis. Molecular Microbiology (2014) 92(6), 1177–1187.

Congratulations!

UiO : CIME

**THE CENTRE FOR INTEGRATIVE MICROBIAL EVOLUTION (CIME)** combines expertise in organismal and molecular biology involving taxonomy, phylogenetics, genomics, epigenetics, ecology, evolutionary biology and developmental biology with extensive experience in different model systems to address fundamental questions of microbial evolution. CIME has status as a prioritized research group at the University of Oslo.

The group is headed by Mike Koomey, contact: j.m.koomey@ibv.uio.no

# Molecular Microbiology in pathogenesis and evolution

Norwegian Microbiology nestor Tore Midtvedt lecturing on “The future is bright for microbe lovers”.

CIME was well represented in the new PhD course - Molecular Microbiology in pathogenesis and evolution. The advanced level PhD course FRM9905 - Molecular Microbiology in Pathogenesis and Evolution - was organized by CIME staff as part of the National PhD School in Pharmacy (NFIF). Based on student evaluations, the course was a great success

Molecular Microbiology in pathogenesis and evolution is a new PhD course in the Norwegian PhD School in Pharmacy (NFIF) and was hosted by the UiO. The course attracted PhD students with research interests within the field of molecular microbiology, both from the NFIF, but also other research institutions in Norway (NTNU, NMBU and the Veterinary institute). Common lunches, a social program, student presentations and get-togethers set the stage for integrative communication between student and lecturers. The course constituted altogether 21 lectures on topics ranging from microbial evolution and host-microbe interaction to host biome and development of antibiotic resistance. All topics were presented by carefully selected speakers - all experts in their respective fields - including several from CIME as well as from prestigious National and International research institutions such as the Karolinska institute, Stockholm and Molecular Infection Medicine Sweden (MIMS), Umeå (EMBL-affiliated centre). The students greatly appreciated the high quality of the presentations. One obligatory assignment was writing a research grant proposal for which the students received helpful training and guidance from skilled grant writers, and from NFR representatives. The other assignment was producing a science communication feature. Both assignments were directed towards improving skills within fields that modern scientists need in the preparation for a successful career in science. When where you ever trained in writing grant proposals?

CIME INFO IS A NEWSLETTER PUBLISHED BY THE CIME RESEARCH GROUP AT UNIVERSITY OF OSLO.
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