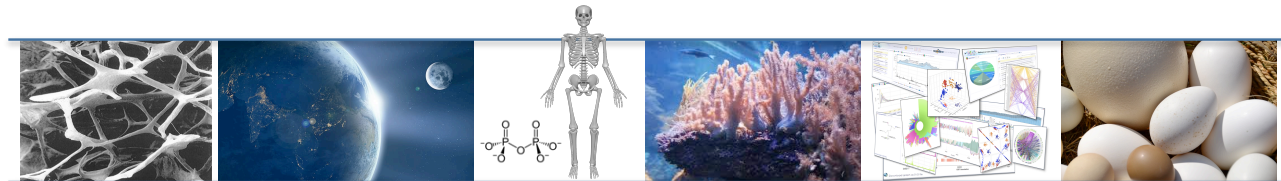


Digital summer school

From Bones to Oceans and Space: the untold stories of Biomineralization

7th - 9th July 2021



LP2M

CSM CENTRE
SCIENTIFIQUE
DE MONACO

UNIVERSITÉ
CÔTE D'AZUR

LIA-ROPSE
«Réponse des organismes et populations face au stress environnemental»

Organizing Committee:

Claudine Blin, LP2M UMR7370, CNRS-UCA, Nice, France
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Support: COST Action EUROSOFTCALC.net

Description: Biomineralization is a highly complex and active biological process that takes into account different aspects, including molecular, cellular and integrative biology, evolution, clinical and therapeutic aspects up to societal and environmental facts. Biomineralization is also a multidisciplinary field comprising biology, chemistry, physics, medicine and environmental sciences. This Digital Summer School is intended to unveil this interdisciplinarity and will give a unique opportunity to young research fellows who wish to enter this field of research to interact with internationally renowned experts.

This Summer School is open to young scientists (PhD, post-docs and early scientists). The program is built on 3 days of courses, interactive workshops, round tables and networking. There will be time for students to present their research projects and receive feedback from the experts.

The aim of this Summer School is to promote general knowledge on all aspects of biomineralization. The course starts with fundamentals aspects of biomineralization, followed by a varied program that integrates clinical and societal and environmental aspects.

Learning Objectives: This Digital Summer School aims to provide advanced training for PhD students and young researchers from academia and private companies. It will also foster knowledge exchange between attendees and contribute to the establishment of scientific collaborations. Specifically, this Summer School will transfer conceptual and practical know-how on the following topics:

- Evolutionary aspects of biomineralization
- Basic biological and non-biological processes
- Clinical and pathophysiological aspects of biomineralization
- Hands-on: Techniques to assess biomineralization processes
- Translational research in biomineralization: from gene to therapeutics
- Societal and environmental aspects

Organization: This Summer School will be 100% online and will combine pre-recorded presentations, live discussions and interactive sessions and workshops.

Contact and registration: For pre-registration please send an e-mail with your name; status and affiliation to Veronique.ESCUDE@univ-cotedazur.fr

PROGRAM

Wednesday July 7

9h45-10.00- Welcome and introduction of the virtual course

10.00-12.00: Fundamental aspects of Biomineralization

Part 1, chairs: TBD

10.00-10.05 : Presentation of speakers by the chairs

10.05-10.25: *Biomineralization and Evolution: Biomineral diversity and functions:* Frederic Marin, France

10.25-10.45: *Fundamentals of calcium-carbonate mineralization: the coral example,* Sylvie Tambutté, Monaco

10.45-11.00: Discussion

Part 2, chairs: TBD

11.00-11.05: Presentation of speakers by the chairs

11.05-11.25: *Fundamentals of calcium-phosphate mineralization:* David Magne, France

11.25-11.45: *Fundamentals of demineralization: bone resorption,* Teun de Vries, Netherlands

11.45-12.00: Discussion

12.00-14.00: Break

14.00-14.45: Workshop 1

In vivo cell imaging by confocal microscopy with pH measurements

14.45-15.30: Round Table Discussion 1

Original models in mineralization (coral, egg, sponge, mollusk)

15.30-15.45: Break

15.45-17.15: Student's presentations, groups 1 & 2

17.15-17.45: Informal discussion, meet the mentor

Thursday July 8

10.00-12.00: Clinical aspects of Biomineralization

Part 1, chairs: TBD

10.00-10.05 : Presentation of speakers by the chairs

10.05-10.25: *Basic and epidemiology of osteoporosis,* TBD

10.25-10.45: *Lessons from rare bone diseases to understand the pathophysiology of common bone diseases*
Cristina Sobacchi, Italy

10.45-11.00: Discussion

Part 2, chairs: TBD

11.00-11.05 : Presentation of speakers

11.05-11.25: *Metabolic diseases and cardiovascular calcifications,* Said Kamel, France

11.25-11.45: *Ectopic calcifications and their impact on the cardiovascular function,* Magnus Bäck, Sweden

11.45-12.00: Discussion

12.00-14.00: Break

14.00-14.45: Parallel workshops to choose:

Workshop 2: *Cytometry for bone cells: application for the characterization of osteoclasts and mesenchymal cells*

Or Workshop 3: *How to quantify biomineralization ?*

14.45-15.30: Round Table Discussion 2

Is there a link between bone and ectopic calcifying diseases? From gene to therapeutic issues"

15.30-15.45: Break

15.45-17.15: Student's presentations, groups 3 & 4

17.15-17.45: Informal discussion, meet the mentor

Friday July 9

10.00-12.00: Societal/environmental aspects

Part 1, chairs: TBD

10.00-10.05 : Presentation of speakers

10.05-10.25: *Societal impact of biomineralization in eggshells*, Joel Gautron, France

10.25-10.45: *Fish as a model to study biomineralization*, Leonor Cancela, Portugal

10.45-11.00: Discussion

Part 2, chairs: TBD

11.00-11.05: Presentation of speakers

11.05-11.25: *Ocean acidification and its impact on biomineralizing organisms*, Alex Venn, Monaco

11.25-11.45: *Impact of space travels on bones*, Laurence Vico, France

11.45-12.00: Discussion

12.00-14.00: Break

14.00-15.00: Debriefing by the students

Interactive discussion and feedback from the attendees on the workshops

15.00-15.45: Round Table Discussion

From ideas to drugs - A startup's story

15.45-16.00: Break

16.00-17.15: Student's presentations, groups 5 & 6

17.15-17.45: Informal discussion, meet the mentor

17.45-18.00: Close of the course