METABOLIC REMODELING IN HEALTH AND DISEASE: FROM MOLECULES TO ORGANELLE TO SOCIETY

CNC Advanced Courses 2021
Doctoral Program in Experimental Biology and Biomedicine (PDBEB)

March 8 – 18, 2021

Coordinators:
Paulo Oliveira - pauloliv@cnc.uc.pt
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PROGRAM

MONDAY - MARCH 8
Morning: The Fundamentals of Cell Metabolism
9:30 – 10:00: Course introduction and group assignments
10:00 - 10:45: John Jones (CNC/CIBB, Portugal), “What is metabolism?”
10:45 - 11:00: Break

Afternoon: Techniques and Models to Study Cell Metabolism
14:00 – 14:45: Vilma Sardão (CNC/CIBB, Portugal), “Methodologies for assessing mitochondrial respiration”
14:45 – 15:30: Paula Matafome (iCBR/CIBB, Portugal) “Models for the study of metabolism”
15:30 - 15:45 - Break
15:45 – 16:30: Teresa Oliveira (CNC/CIBB, Portugal) “(Biological) data practices and science integrity”
16:05 - 16:35: Francisco Pereira (CISUC, Portugal) “Machine learning meets cell biology and biomedicine”
16:35: Students group work

TUESDAY – MARCH 9
Morning: Metabolism and Disease I
10:15 – 11:00: Nuno Raimundo (CNC/CIBB, Portugal) “Mitochondria and lysosomes at the helm of metabolism and cell fate”
11:00 - 11:15: Break
11:15 – 12:00: Robert Taylor (Newcastle University) “Investigating the molecular basis of mitochondrial genetic disease”

Afternoon: Spinning-off Research
14:00 – 14:30: Martin Winter (micro-biolytics GmbH, Germany) “How I became an entrepreneur as a PhD student”
14:30 – 15:00: José Duarte (MitoTAG, Portugal) “MitoTAG, from bench to start-up”
15:00 – 15:30: John Jones (SEAentia, Portugal) “SEAentia: A metabolic approach to aquaculture”
15:30 – 15:45: Break
15:45 – 16:15: Barry Bochner (Biolog, USA) “Metabolic profiling microarrays of cells and mitochondria”
16:15: Students group work

WEDNESDAY - MARCH 10
Morning:
9:30-10:00. João Ramalho-Santos (CNC/CIBB & DCV/FCTUC, Portugal) “Scientists & Society: Why (and how) should we bother?”
10:00-10:45. Mireia Alemany-Pagès (CNC/CIBB & IIIUC, Portugal) “Communicating NAFLD with comics”
10:45 - 11:00: Break
11:00 - 12:30: Maria Kristiansen (Department of Public Health & Center for Healthy Aging, University of Copenhagen, Denmark) “Interdisciplinarity and participatory designs to enhance understandings of aging”

Afternoon:
14:00 – 14:45: Anabela Marisa Azul (CNC/CIBB, Portugal), “(Un)Healthy lifestyles, environment, well-being and health capability in rural neighbourhoods: a community-based cross-sectional study”
14:45- 15:30: Sara Araujo (FELUC/CES) “Challenges and possibilities of interdisciplinary approaches and methodologies. Is there anything to learn from social sciences?”
15:30 – 15:45: Break
15:45 – 16:30: Adelino Gonçalves (DARQ/FCTUC & CES-UC, Portugal) “Urban dimension of heritage and rehabilitation as development policies. Is it translational to human health and well-being?”
16:30: Students group work
Metabolic Remodeling in Health and Disease: From Molecules to Organelle to Society

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The presentation can be supported by any visual means (e.g. Powerpoint slides, MVP, etc) and must contain the following elements:

a) Problem to be solved
b) Current ideas/competition and limitations
c) Your idea
d) Why your idea is better than the competition
e) Team
f) Funding requested / Predicted sales
g) Milestones of your project / possible exit
h) Closing punch line.

For the Course evaluation, we propose a very challenging task. In groups of 4 students (defined by draft), you need to create a fictitious business idea focusing on any topic covered in this course (e.g. biomarker discovery, intervention, novel equipment for diagnosis, etc, all focusing on metabolism and disease) and defend your proposal in a 7-minute pitch to potential investors. Think Shark Tank but CNC-style and with much sharper teeth.

The program:

Thursday - March 11

Morning: Metabolism and Disease II
9:50 – 10:10: Maria Ines Sousa (CNC/CIBB, Portugal) “Metabolic regulation of paused pluripotency”
10:10 – 10:50: Afshan Malik (King’s College London, UK) “Mitochondrial dysfunction in diabetic complications”
10:50 - 11:00: Break
11:00 – 11:45: João Teodoro (CNC/CIBB, Portugal) “The soluble adenyl cyclase inhibitor LRE1 or how contrary results are even better results”
11:45 – 12:05: Ana I. Duarte (CNC/CIBB, Portugal) “Brain (dys)metabolism in cardiovascular risk and (reproductive) aging”

Afternoon: Metabolism and Disease III
14:00 – 14:45: Kendall Wallace (University of Minnesota, Duluth, USA) “Mitochondrial senescence and the consequence to metabolic regulation in the aging individual”
14:45 – 15:30: Paulo Gameiro (University College of London, UK) “Metabolic shifts and RNA modifications in gene regulation”
15:30 – 15:45: Break
15:45 – 16:15: Ana Teixeira (FCDEF, Portugal) “Physical activity, metabolism, and the immune system”
16:15: Students group work

Friday - March 12

09:30 - 12:00: Student Presentations
14:00 - 15:00: CNC Seminar: Jiri Neuzil (Institute of Biotechnology, Academy of Sciences of the Czech Republic, Prague) “SUCLG2 is a new tumour suppressor in paraganglioma and pheochromocytoma”

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