



CNB - CSIC Colloquium on

Programmability and predictability of Biological Systems

Campus Univ. Autónoma de Madrid
C/ Darwin, 3

February 11, 2019

Limited Capacity

(For catering purposes, please confirm attendance to synthetic@cnb.csic.es, I. Merino)

Morning Session (Chairperson: Víctor de Lorenzo)

09:45 - 10:00 Welcome and General Information by Víctor de Lorenzo

10:00 - 10:30

Opening Talk: Saúl Ares

Centro Nacional de Biotecnología - CSIC (Spain)

Title: *Prediction-based discoveries in the vertebrate segmentation clock*

10:30 – 11:00

Pablo Catalán

University of Exeter - UK

Title: *Phenotypic bias and evolutionary predictability in a pattern-formation genotype-phenotype map*

11:00 – 11:30

Coffee Break (CNB Lobby)

11:30 – 12:00

Belén Calles

Centro Nacional de Biotecnología - CSIC (Spain)

Title: *Digitalizing heterologous gene expression in Gram-negative bacteria with a portable on/off module*

12:00 – 12:30

Joachim Krug

Institute of Theoretical Physics, University of Cologne (Germany)

Title: *Quantifying the predictability of evolution*

12:30 – 12:45

Huseyin Tas (short talk)

Centro Nacional de Biotecnología - CSIC (Spain)
 Title: *Inter-species portability and reusability of genetic devices*

12.45-13.00 **Alvar Alonso** (short talk)
 Centro Nacional de Biotecnología - CSIC (Spain)
 Title: *Predicting anti-ageing interventions through redox balance modeling*

13.00 - 13.45 ***Fingerfood lunch (CNB Lobby)***

Afternoon Session (Chairperson: Susanna Manrubia)

13.45-14.30 **Keynote Lecture: Howard Salis**
 Biological Engineering and Chemical Engineering - Penn State University (USA)
 Title: *The Power of Autonomous Prediction: Model-based Biophysical Design of Thousands of Engineered Genetic Systems*

14:30 - 15:00 **Rafael Silva-Rocha**
 Facultad de Medicina de Ribeirao Preto (USP) - Brasil
 Title: *Engineering complexity in microbial regulatory networks*

15:00 - 15:30 **Santiago Elena**
 Universidad de Valencia - Spain
 Title: *To which extent can we predict RNA virus evolution?*

15:30 – 16:00 ***Coffee Break (CNB Lobby)***

16:00 – 16:30 **Raúl Guantes**
 Condensed Matter Physics Center (IFIMAC), Universidad Autónoma de Madrid - Spain
 Title: *Variability and predictability in cell death*

16:30 – 17:00 **Closing Talk: Luis Rubio**
 Centro de Biotecnología y Genómica de Plantas (CBGP, UPM-INIA) - Spain
 Title: *Combining synthetic biology and hard core biochemistry to assemble nitrogenase in yeast*

17:00 – 17:30 **General Discussion and Conclusions** (Animated by Víctor de Lorenzo and Susanna Manrubia)

End of Colloquium