

ICFO Colloquium: Writing genomes and metagenomes, and the advent of synthetic evolution

MARC GUELL

May 08, 2026

10:00 to 11:00

ICFO Auditorium

PROFILE:

Marc Güell is an ICREA Research Professor, working at Pompeu Fabra University. His work includes several synthetic biology advances (radically recoded genome, PERVs-free pigs novel gene writing technologies, skin microbiome engineering) that have produced important impact (>24,000 citations, 4 companies developing therapies, patents licensed to leading companies) and he is currently developing new principles for biological engineering and synthetic evolution (<https://synbio.upf.edu>). He is an EMBO Young Investigator and member of Academia Joven de España. He has been recognized as 'Highly Cited Researcher' (2019); and with the National Research Award to the young talent (2018), the August Pi i Sunyer Award (2021) and the National Research Award Angela Ruiz Robles (2022).

ABSTRACT:

Our research is focussed in developing new principles and technologies to engineer biological systems. AI is revolutionizing biodesign, and its coupling with multiplex DNA writing enables a new concept of synthetic evolution which promises to accelerate synthetic biology. First, I will present our vision on how we are leveraging bioprospecting, AI and evolution to create new biological functions. Then, I will focus on 1) how we developed a gene writer for human cells and its deployment ex vivo (T cells) and in vivo (liver targeting). 2) how we use *Cutibacterium acnes* as a chassis to engineer human skin properties.

Hosted by: Pelayo Garcia de Arquer