



ICGEB

International Centre for Genetic
Engineering and Biotechnology

Developing
Knowledge

ICGEB International SEMINAR PROGRAMME 2018

Friday, 27 April 2018 | 12:00 noon | ICGEB Seminar Room, W building | Padriciano, 99, Trieste, ITALY



Matias ZURBRIGGEN

*Institute of Synthetic Biology and CEPLAS,
Heinrich-Heine-Universität Düsseldorf,
GERMANY*

The engineering of neurons with light-regulated ion channels has enabled the non-invasive study of neuronal networks in vivo at unprecedented spatio-temporal resolution. This experimental breakthrough has revolutionized neurosciences, with hundreds of applications contributing key insights into nervous system function having taken root within only few years. The success of optogenetics in neurobiology is followed by the more generalized use of light as stimulus to remote control a wide range of cellular processes, from gene expression up to cell viability and function.

Our synthetic biology research focuses on engineering bacterial and plant photoreceptors sensitive to different wavelengths of the white light spectrum (UV-B, blue, green, orange, red/far-red) into synthetic photoswitches rewired to control molecular processes with high precision, quantitative and high spatio-temporal resolution, in a non-invasive way and with minimized toxicity. We implement these molecular tools into microbial, mammalian and plant cells, and in vivo in animals and plants for selectively manipulating signaling networks and metabolic pathways. This synthetic biology approach opens up unforeseen perspectives in fundamental and applied research, as exemplified hereby in the study of signalling pathways, biomedical field, crop design as well as for the production of high value biopharmaceuticals.

“Optogenetic tools for the control and understanding of cellular processes in animal and plant systems”

Host: S. Zacchigna

Registered seminars are available on YouTube, iTunes and ICGEB Podcast at:

<http://www.icgeb.org/podcast-program.html>

More information at:

seminars@icgeb.org | tel.: 040-3757377



Open event - Free entrance

