



11st ARTURO FALASCHI LECTURE

Mercoledì 31 Maggio 2023

Ore 10:30

Aula “Arturo Falaschi”

**Istituto di Genetica Molecolare
Luigi Luca Cavalli Sforza - CNR**

**Prof. Cornelius Gross
Interim Head of EMBL Rome**

***“Acting on our instincts:
understanding emotional
decision making”***

Dr. Gross was raised in the United States and received undergraduate training in spectroscopy and biophysics at the University of California, Berkeley and then pursued doctoral research at Yale University studying transcriptional regulation under William McGinnis.

Following the award of his PhD, Dr. Gross served as a public high school teacher in New York City where he gained an appreciation for the benefits and challenges of communicating science to a lay audience. Inspired by his work with high school students, Dr. Gross eventually returned to the laboratory to continue his research career in the field of behavioural neuroscience.

As a postdoctoral fellow in the group of René Hen at Columbia University he discovered a developmental role for serotonin in determining anxiety behaviour in mice and identified the serotonin receptor responsible for the therapeutic effects of antidepressants. In 2003 he established his independent group at the European Molecular Biology Laboratory (EMBL). Early work from the group showed how serotonin moderates the impact of maternal care on anxiety and how deficits in serotonin autoregulation can cause sudden infant death syndrome. During this period he also worked extensively on the role of microglia in shaping the developing brain and published a landmark paper (cited over 3400 times) that founded the field of microglia and synaptic remodelling. In 2010 Dr. Gross undertook a major refocusing of his laboratory and embarked on a series of studies characterizing the hypothalamic and brainstem circuits that regulate social and predator fear. Current work in the laboratory aims to understand how local circuitry in these areas process social threat information, how they calculate escape decisions, and how these decisions are adapted to territorial context and social experience. His long-term goal is to identify cellular, circuit, and molecular mechanisms that can inform our understanding of emotional decision making and adaptation to social threat in humans.

Dr. Gross has served on institutional advisory boards across the world, he is an adjunct professor at Monash University in Melbourne, and has been chair of the ERC Consolidator Grant Neuroscience Panel since 2018. In 2022 he was inducted as an EMBO Member. His laboratory has been funded by numerous private foundations, as well as the US National Institutes of Health (NIH & NIEHS) and the European Commission, and he has twice been awarded an Advanced Grant from the European Research Council (ERC). Dr. Gross is currently Senior Scientist and Interim Head of the Epigenetics & Neurobiology Unit of EMBL in Rome, Italy.