



WORKSHOPS
“CURRENT TRENDS IN
BIOMEDICINE”
2023

SEDE ANTONIO MACHADO
BAEZA, SPAIN

ELEMENTS EMPOWERING
RNA FUNCTION:
FROM BENCH TO BEDSIDE

Baeza, Spain • 24th-26th October 2023





Organized by:

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SCOPE

Many of the activities carried out by **non-coding RNA** sequences are underpinned by short RNA elements. These **functional modules** can be identified in **native** RNA molecules or can be **artificial**, either designed based on known principles or selected by applying an evolutionary pressure to complex RNA libraries. The biotechnological applications of native or artificial functional RNA modules are immense. In most cases, the strategies to identify functional RNA elements do not directly reveal the mechanisms that support their functionality. Some RNA domains may be modified with the **epigenetic RNA code**. In fact, hundreds of RNA modifications have been described to date that impact RNA function. Many RNA elements are functional only when folded into secondary or tertiary structures. While structure prediction programs are in place, reliable determination of the **RNA structure** of a particular element requires expertise in the fields of magnetic resonance, chemistry, cryo-electron microscopy or atomic force microscopy. Understanding the structure of functional RNA elements is essential to pursue the long-dreamed goal of finding the **RNA code**: the set of rules encoded in RNA sequence and modification that govern RNA function. This ambitious goal may be possible to achieve with the biochemical tools we have at hand coupled



with the advancements of **artificial intelligence**. Decrypting the RNA code should allow us to design functional RNA elements with potent biotechnological applications. This is essential for the future of RNA therapeutics. To navigate towards deciphering the RNA code requires to bring together experts in the RNA field studying molecular and computational biology, genomics, biochemistry, biophysics and structural biology. The final aim of the Workshop is building the future science that will help to understand the code hidden within the RNA that drives functionality, and help the design of forthcoming RNA therapeutics.

FORMAT OF THE WORKSHOP

The workshop will bring together a maximum of 15 speakers and 35 participants, to form a group of around 50 people. The scientific programme will start in the morning of Tuesday, October 24th, and will end around noon on Thursday, October 26th. Ample time for informal discussion will be reserved. Participants will be invited to present a poster.

VENUE OF THE WORKSHOP

The workshop will be held in Baeza, at the “Sede Antonio Machado”, a XVII century building turned into a Conference Centre of the Universidad Internacional de Andalucía (UNIA). This Seat includes a residence, where participants will be accommodated. Baeza is a World Historic Heritage town, renowned for its Renaissance and Gothic buildings.

SPEAKERS

Alfredo Berzal-Herranz Instituto de Parasitología y Biomedicina "López Neyra", Consejo Superior de Investigaciones Científicas (IPBLN-CSIC). Granada, Spain.



- Neva Caliskan** Helmholtz Institute for RNA-based Infection Research, Helmholtz Centre for Infection Research / Faculty of Medicine, University of Würzburg. Würzburg, Germany.
- Puri Fortes** Center for Applied Medical Research (CIMA), University of Navarra (UNAV) / Navarra Institute for Health Research (IdiSNA) / Liver and Digestive Diseases Networking Biomedical Research Centre (CIBERehd) / Spanish Network for Advanced Therapies (TERAV ISCIII) / Cancer Center Clinica Universidad de Navarra (CCUN). Pamplona, Spain.
- Michaella Frye** Division of Mechanisms Regulating Gene Expression, German Cancer Research Center (DKFZ). Heidelberg, Germany.
- Maite Huarte** Center for Applied Medical Research, University of Navarra / Institute of Health Research of Navarra (IdiSNA). Pamplona, Spain.
- Samie R. Jaffrey** Department of Pharmacology, Weill Cornell Medicine, Cornell University. New York, NY, USA.
- Grzegorz Kudla** MRC Human Genetics Unit, University of Edinburgh. Edinburgh, UK.
- Anders H. Lund** Biotech Research and Innovation Centre, Faculty of Health and Medical Sciences, University of Copenhagen. Copenhagen, Denmark.



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Katja Petzold Department of Medical Biochemistry and Biophysics, Karolinska Institute. Stockholm / Department of Medical Biochemistry and Microbiology, Uppsala University. Uppsala; Sweden.

Beatrix Suess Department of Biology / Center for Synthetic Biology; Technical University of Darmstadt. Darmstadt, Germany.

Petr Svoboda Institute of Molecular Genetics of the Czech Academy of Sciences. Prague, Czech Republic.

Igor Ulitsky Department of Immunology and Regenerative Biology and Department of Molecular Neuroscience, Weizmann Institute of Science. Rehovot, Israel.

Sarah A. Woodson Thomas C. Jenkins Department of Biophysics, Johns Hopkins University. Baltimore, MD, USA.

DEADLINE: 1st SEPTEMBER 2023

MORE APPLICATIONS WILL BE ACCEPTED IN CHRONOLOGICAL ORDER UNTIL COMPLETING THE WORKSHOP



MORE INFORMATION AND APPLICATION:

<http://www.unia.es/biomedicine>

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