



ESF Forward Look

*RNA World: a new frontier in
biomedical research*

1st Workshop

Methodologies for RNA Discovery

Max Planck Institute for Infection Biology,
Berlin, Germany

17 December 2007

Chairs: Thomas Tuschl (Rockefeller University, New York,
USA) & Jörg Vogel (Max Planck Institute for Infection
Biology, Berlin, DE)

www.esf.org/rnaworld



About ESF, EMRC and ESF Forward Looks

The European Science Foundation (ESF) provides a platform for its Member Organisations to advance European research and explore new directions for research at the European level. Established in 1974 as an independent non-governmental organisation, the ESF currently serves 75 Member Organisations across 30 countries. Its activities include providing science policy advice (Science Strategy); stimulating co-operation between researchers and organisations to explore new directions (Science Synergy); and the administration of externally funded programmes (Science Management). These take place in the following areas: physical and engineering sciences; medical sciences (EMRC); life, earth and environmental sciences; humanities; and social sciences.

The European Medical Research Councils (EMRC), managing all medical science issues within the ESF, is the membership organisation for all the Medical Research Councils in Europe. The mission of EMRC is to promote innovative medical research and its clinical application towards improved human health. EMRC offers authoritative strategic advice for policy making, research management, ethics, and better health services.

Foresight studies, referred to as ESF Forward Looks, represent the flagship activity within ESF's strategic portfolio. Forward Looks enable Europe's scientific community, in interaction with policy makers, to develop medium to long-term views and analyses of future research developments with the aim of defining research agendas at the national and European level. Forward Looks are driven by ESF's Member Organisations and, by extension, the European research community.

About the ESF Forward Look *RNA World: a new frontier in biomedical research*

The Forward Look **RNA World: a new frontier in biomedical research** aims to integrate several RNA research areas, not only within eukaryotic but also prokaryotic RNA research. Through a series of three thematic workshops and a consensus conference this foresight activity endeavours to investigate the status quo of the field, to determine European strengths and weaknesses to establish a 5-10 year outlook. The workshops and the conference are considered stepping stones towards a planned report that is designed to give advice to research funding and research performing institutions.

The first workshop **Methodologies for RNA Discovery** brings together experts and leaders in the area of RNA biology studying diverse organisms using diverse technologies. It is the aim of the workshop to provide recommendations for directing the attention of funding agencies to anticipated developments in the RNA field. The focus of the workshop is on non-coding RNA discovery and their characterization. The discussions might address certain areas of expertise specific to the European science environment and consider program recommendation and competition on those aims in other countries (Japan, USA). It is also planned to discuss what the European strengths, weaknesses, opportunities and threats (SWOT analysis) over the next 5 to 10 years in this area of research are? What kind of programs do already exist, and what is needed to make Europe more competitive in this area of research?

ESF Forward Look *RNA World: a new frontier in biomedical research*

Scientific Organising Committee:

- **Lars Thelander (chair)**
Institute for Medical Biochemistry and Biophysics, Umea (SE)
- **Annick Harel-Bellan (co-chair)**
Institut André Lwoff, CNRS, Villejuif (FR)
- **Jörg Vogel (co-chair)**
Max Planck Institute for Infection Biology, Berlin (DE)

- **Fritz Eckstein**
Max-Planck Institute for Experimental Medicine, Göttingen (DE)
- **Jorgen Kjems**
University of Aarhus (DK)
- **Bengt Nordén**
Chalmers University of Technology, Göteborg (SE)
- **Thomas Tuschl**
Laboratory of RNA Molecular Biology, New York (US)
- **Hans–Peter Vornlocher**
Roche Kulmbach GmpbH, Kulmbach (DE)
- **Gerhart Wagner**
Institute of Cell & Molecular Biology, Uppsala (SE)

ESF/EMRC office:

- **Thomas Bruhn**
ESF Science Officer
- **Blanche Facchini-Schaller**
Administrator

Provisional Conference Programme

MONDAY 17TH DECEMBER

08.30-08.45 Introduction to the ESF and the Forward Look Scheme

- Thomas Bruhn
ESF Science Officer

08.45-08.55 Introduction to FL *RNA World: a new frontier in biomedical research*

- Lars Thelander

08.55-09.40 *Scientific* Presentations by the Scientific Organising Committee

Each participant should introduce her/himself briefly (5 min), showing **up to 3 slides** that best define their area of expertise and their interest in RNA methodologies

- Lars Thelander
- Jörg Vogel
- Annick Harel-Bellan
- Bengt Nordén
- Gerhart Wagner
- Thomas Tuschl
- Hans-Peter Vornlocher
- Jørgen Kjems
- Fritz Eckstein

Coffee Break 09.40-10.00

10.00-11.40 *Scientific* Presentations by Scientists and Guests

Each participant should introduce her/himself briefly (5 min), showing **up to 3 slides** that best define their area of expertise and their interest in RNA

Gene Discovery and Genetics (5 min presentations)

- David Baulcombe (UK)
- Alexander Hüttenhofer (Austria)
- Rene Ketting (Netherlands)

Biochemistry and Structural Biology (5 min presentations)

- Edward Chan (USA)
- Witold Filipowicz (Switzerland)
- Michael Kiebler (Austria)
- Reinhard Lührmann (Germany)
- Pascale Romby (France)

Computational Biology (5 min presentations)

- Hanah Margalit (Israel)
- Nikolaus Rajewsky (Germany))
- Peter Stadler (Germany)
- Mihaela Zavolan (Switzerland)

Viewpoint from Industry (10 min presentation, 3 min questions)

- Roland Wicki (ABI)
- Mark Dronsfield (Illuminate)
- to be named (Roche)

11.40-13.00 Presentations on *Future Directions* by Scientists and Guests

Each participant should prepare **1 or 2 slides (2-3 min per speaker)** that best reflect her/his personal opinion regarding key issues of future RNA-focussed science (basic, translational, clinical science, biotechnology, disease).

13.00-14.00 Lunch

14.00 – 16.30 Guided Discussion (moderated by Jörg Vogel and Tom Tuschl)

- Definition of workshop topic
scientific area and questions, define framework
- Background
current status of research in Europe versus International efforts
- Major programs/strategic initiatives in Europe
centers, funding possibilities
- Exploitation
transfer of research findings into products, Europe versus International

16.30-17.00 Coffee Break

17.00 – 18.00 Wrapping up

- Building recommendations
consensus among participants
- Scientific Summary
Jörg Vogel and Tom Tuschl

18.00-18.15 Closing Remarks by Lars Thelander

20.00 Dinner (meeting point in the lobby of the hotel at 19.30 hrs)