

Workshop:
**OPEN QUESTIONS ON THE
ORIGINS OF LIFE**

*Palacio Miramar, SAN SEBASTIAN - DONOSTIA, SPAIN,
MAY 20-23, 2009*



Main organizers:
Pier Luigi Luisi & Kepa Ruiz-Mirazo

Local organization: IAS Research Group

Dpt. Logic and Philosophy of Science & Biophysics Research Unit
UNIVERSITY OF THE BASQUE COUNTRY (UPV/EHU)



Spirit of the meeting

The overall idea behind this workshop is to tackle a number of key questions about the origin of life that still remain unanswered, attempt to clarify why it is so, and to discuss how to progress in our efforts to answer these questions.

In the field of the origins of life, as in many other fields, there is a tendency and a danger for all of us to keep working in our own, fairly narrow areas of expertise and ignore “the big picture”. Thus, from time to time, it is important to ask “where are we in the field and what are the main stumbling blocks on the road?” A similar meeting was already held, in a preliminary form, in Erice, Sicily, in 2006. It created a considerable interest, so many researchers asked that we continue the experiment in a more developed form. In fact, one conclusion of the Erice meeting was that it should be repeated, possibly on regular basis (every 2-3 years) and involved more countries and a larger number of young researchers.

The results of this meeting, in terms of abstracts and short communications, will be published in a special issue of *Origins of Life and Evolution of the Biosphere*, as it was the case after the Erice meeting.

2009 is an excellent year for this type of meeting, as it is the bicentenary of Charles Darwin’s birth, on the 12th of February 1809, and the 150th anniversary of the publication of *Origin of Species*, on November 24th, 1859. Therefore, our workshop will be a contribution to a host of events that will be organized around the world to celebrate this special anniversary.

The format of the workshop will be quite different from formats of other meetings in the field. Eight questions were chosen from the initial list of 14 questions on the basis of the feedback from potential contributors and a wide representation of the community of researchers interested in the field of origins of life. These questions are:

- *To what extent the origins of life were deterministic or based on contingency?*
- *Is life an emergent property?*
- *Was the origin of life heterotrophic or autotrophic?*
- *What were the origins of catalytic cycles?*
- *How plausible is the “RNA world” hypothesis?*
- *How to bridge a gap between the protocellular world and the minimal cell?*
- *Is life a unity or confederacy?*
- *How to define the very origin of life?*

Organization and preliminary program

The meeting will consist of 8 sessions spread over 4 days (one session in the morning and one in the afternoon). Each session will focus on a single question, presented by the chairperson (5-10 min.), that will be addressed directly by 4-5 panelists (the speakers) in brief talks (15-20 min each). Those talks will be followed by a discussion between the panelists and one hour of open discussion.

The participants will be divided into small groups, 4-5 people each. Every group will have 20 min to discuss the contributions of the panelists and prepare questions, comments or criticisms. Then, one representative of each group will present these comments to all other participants (max. 10min.). This will be followed by brief answers from the panelists. Thus, each session will last approximately 3.5 hours. This format is aimed at involving all participants, especially young researchers.

PRELIMINARY PROGRAM -- WORKSHOP 'OPEN QUESTIONS ON THE ORIGINS OF LIFE'
Donostia-San Sebastián, Basque Country, Spain --- MAY 20-23 (2009)

| TIME / DAY | Wednesday, 20th | Thursday, 21st | Friday, 22nd | Saturday, 23rd |
|---------------|---|---|---|--|
| 9:00 – 9:30 | OPENING: krm & pll | | | |
| 9:30-11:00 | Contingency vs. determinism <i>Chairman:</i> R. SHAPIRO - VICTOR NORRIS - SANDRA MITCHELL - ANDREW POHORILLE - PIER LUIGI LUISI | Is life an emergent property? <i>Chairman:</i> A. POHORILLE - SANDRA PIZZARELLO - TAKASHI IKEGAMI - STUART KAUFFMAN - ANDRES MOYA | Origin of catalytic cycles <i>Chairman:</i> J. SUTHERLAND - STUART KAUFFMAN - PETER SCHUSTER - TAKUYA UEDA - ROBERT SHAPIRO | Life as a unity or confederacy <i>Chairman:</i> P. L. LUISI - ERIC SMITH - ALVARO MORENO - ANTONIO LAZCANO |
| 11:00-11:30 | coffee break | | | |
| 11:30-13:00 | Contingency vs. determinism <i>(OPEN DEBATE)</i> | Is life an emergent property? <i>(OPEN DEBATE)</i> | Origin of catalytic cycles <i>(OPEN DEBATE)</i> | Life as a unity or confederacy <i>(OPEN DEBATE)</i> |
| 13:00 – 14:30 | lunch | | | |
| 14:30-16:00 | Plausibility of RNA world <i>Chairman:</i> A. SCHWARTZ - PETER SCHUSTER - JOHN SUTHERLAND - ROBERT SHAPIRO - ADA YONATH - PETER NIELSEN | Minimal (proto-) cell world? <i>Chairman:</i> P. STANO - SASA SVETINA - TETSUYA YOMO - FEDERICO MORÁN - KNUD NIERHAUS - GARCÍA/PERETÓ/MOREIRA | Autotrophy vs. heterotrophy <i>Chairman:</i> J. PERETÓ - ANTONIO LAZCANO - SHEREF MANSY - ROBERT PASCAL - WOLFGANG WEIGAND - ERIC SMITH | Defining the origin of life <i>Chairman:</i> A. MOYA - DORON LANCET - SANDRA PIZZARELLO - H. JAMES CLEAVES - MARTIN HANCZYC - K. RUIZ-MIRAZO |
| 16:00-16:30 | coffee break | | | |
| 16:30-18:00 | Plausibility of RNA world <i>(OPEN DEBATE)</i> | Minimal (proto-) cell world? <i>(OPEN DEBATE)</i> | Autotrophy vs. heterotrophy <i>(OPEN DEBATE)</i> | Defining the origin of life <i>(OPEN DEBATE)</i> |
| 18:00-18:30 | CLOSURE: pll & krm | | | |

Registration still open (but limited places) !

For more information, visit our webpage: <http://oqol2009.wordpress.com/>

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