



Open call for a PhD position on ‘minimal metabolism’

- A. Under the supervision of Kepa Ruiz-Mirazo -- University of the Basque Country (Spain)
[Co-supervision: Christoph Flamm – University of Vienna (Austria)]
- B. Within the European ITN Project ‘ProtoMet’
[Protometabolic pathways: exploring the chemical roots of systems biology]
NOTE: This project has received funding from the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 813873.
- C. Great opportunity for Early Stage Researchers (‘ESR’s – see below) highly motivated to investigate a deep scientific question, the origins of metabolism, working across several disciplines (physics, chemistry, biology, computer science, philosophy of science) but accurately and methodically, in close collaboration with other colleagues from academia and industry.
- D. Training includes internships, secondments and a variety of technical courses/modules.
- E. Transversal and transferable capacities to be developed: communication and team-work skills, among others.
- F. Funding guaranteed for 36 months (salary & research support).

Requirements

All candidates must possess a Master’s degree or equivalent by the deadline for application (alternatively, a total of 240 ECTS -- combining the B.Sc. and/or M.Sc. degrees), which allow them to enter a Spanish PhD program in Sciences or Humanities at the University of the Basque Country (UPV/EHU).

The applicant must be proficient in English, both written and spoken. Computer skills will also be valued.

Eligibility according to the Marie Curie Training Program

- Researcher status: Early-Stage Researchers (ESRs) are young researchers who, at the date of recruitment (the starting date indicated in the contract), are in the first four years (fulltime equivalent research experience) of their research careers and have not been awarded a doctoral degree.
- Nationality: Applicant ESRs can be of any nationality.
- Mobility requirements: Applicant ESRs must not have lived or carried out their main activity (work, studies, etc.) in the country of the recruiting beneficiary (University of the Basque Country) for more than 12 months in the 3 years immediately prior to the date of recruitment (compulsory national service, short stays or holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention will not be taken into account).

Procedure

The applicant should write by e-mail to Kepa Ruiz-Mirazo (kepa.ruiz-mirazo@ehu.eus), before January 15, 2019, attaching the following documents/information:

- A detailed CV
- A copy of the Bachelor’s and Master’s certificates and the respective Transcript of Records
- Summary of the Master’s degree thesis
- A letter of motivation, including a declaration of whether s/he is applying to some other ESR in the ProtoMet network and, in that case, in which order of preference.
- Email contact of two names of referees to be contacted for recommendation letter

A more detailed description of the profile can be found in the table below.

ESR[n°6]	<i>'Minimal metabolism' as a central concept for understanding the origins of life (OL) and developing systems biology (SB)</i>
Host institution	<i>Department of Logic and Philosophy of Science & Biofisika Institute, University of the Basque Country, Spain</i>
Supervisor:	<i>Kepa Ruiz Mirazo</i>
Co-supervisor:	<i>Christoph Flamm, Institute for Theoretical Chemistry, University of Vienna, Austria</i>
Objectives:	<ol style="list-style-type: none"> <i>1. Conceptual analysis and characterization of 'minimal metabolism' (MM).</i> <i>2. Theoretical exploration of chemical reaction maps underlying MM.</i> <i>3. Study the implications of MM research for the fields of OL and SB.</i>
Description:	<p><i>The concept of minimal metabolism will be explored and re-conceptualized in the light of the results obtained by the various lines of work within the network, assessing its relevance for the general problem of origins of life, as well as to provide better chemical foundations for field of systems biology. ESR6 will visit most laboratories of the ITN to study the compatibility of the different experimental approaches tackled by each of them, identify potential inter-connections among them and contribute to their theoretical integration. The analysis on the nature and emergence of minimal forms of metabolism, including the role of compartments in the process, will be aided by the use of already available computational platforms (written in python and C++).</i></p>
Expected Results:	<ol style="list-style-type: none"> <i>a. Proposal for the conditions that a chemical reaction network should fulfil in order to become a minimal metabolism.</i> <i>b. Map of possible organic chemistries leading to a core metabolism compatible with early life on Earth.</i> <i>c. Historical and philosophical analysis of the MM concept in OL and SB.</i>
Profile of the fellow:	<p><i>Candidates for this fellowship should have a high motivation for transdisciplinary research, but starting with a solid background in physics, chemistry, biology or philosophy of science. The person should demonstrate an excellent level of written and spoken English, capacities for team-work, as well as computer programming skills (preferably, python and C++).</i></p>
Address for application	kepa.ruiz-mirazo@ehu.eus
Deadline for application	<i>[15, January, 2019]</i>