

Symplectic Biology

accepts contributions from a broad range of disciplines and covers topics such as:

The cell machine:

Concrete scenarios for the origin of life, with emphasis on metabolism of molecules not readily present under standard abiotic conditions (coenzymes, nucleotides, lipids, basic amino acids)

Reproduction of networks of objects

Evolution and ageing of peptides, proteins, RNA, their modifications and interactions

Assembly and function of macromolecular complexes

Functional promiscuity

Nanomachines: molecular motors, cytoskeletal dynamics, cellular import and export, cell division

Single molecule studies and nanobiotechnology

Metabolism, with emphasis on evolution of metabolism and novel metabolic pathways. Typically novel pathways for biofuels or complex plant molecules will be considered in priority

Generation of biologically relevant patterns

The cell program:

Comparative genomics with emphasis on the genes coding for the essential functions of life

Replication of the genetic program with emphasis on proof-reading, quality control and the architecture of the chromosome

The logics of gene regulation, with emphasis on the similarities and discrepancies with engineering approaches

Construction of ad hoc metabolic pathways with emphasis on heterologous expression

Symplectic Biology

offers a stimulating combination of the following:

Research articles:

Comprehensive, fully documented reports of original research. Emphasis will be placed on the quality of the Materials and Methods sections meant to permit rapid reproduction of experiments

Research and teaching:

Critical follow up of the iGEM and similar experiences in synthetic and systems biology, with emphasis on long-term successes in SB constructions and identification of bottlenecks

Invited Rapid Reviews: Peer-reviewed critical evaluations of the existing state of knowledge on emerging concepts or experimental technologies relevant to the scope of the journal

"Challenge in Symplectic Biology" papers:

On a regular basis Symplectic Biology will offer challenges to Synthetic and Systems Biology approaches, i.e. conceptual and experimental questions that need to be solved to permit developments of the discipline.

Recognition of the work of investigators who solved the challenges will be provided by awards

Symplectic Biology is peer-reviewed

Articles will only be accepted if presenting novel and original information shown to be of interest to the community of investigators involved in the domains covered by the scope of the journal

The aim of the journal is rapid publication: the authors need to prepare their articles so that they could be published rapidly, i.e. after minor modifications

In order to make the procedure as transparent as possible, the comments of the reviewers are published on-line together with the article

symplectic biology
rapid research notes in
systems and synthetic biology

<http://www.symplecticbiology.org/>

Aims and Scope

Symplectic Biology is a peer-reviewed journal fostering the integration of Synthetic Biology with the more traditional Systems Biology.

It aims at rapid publication of novel experiments and concepts.

As its name indicates (« symplectic » is the greek equivalent of the latin « complex » without its fuzzy connotations) it endeavours to integrate physics, chemistry, information sciences and other mathematics-based disciplines into a rapidly accessible network of experiments and models permitting to combine in a challenging way the various aspects of what is traditionally named the complexity of living phenomena. Its primary aim is to promote construction of synthetic life via the quantitative characterization and understanding of biological systems at different levels of integration, ranging from the role of structure and dynamics of a single molecule to the organization and evolution of molecular and cellular networks.

Submissions

<http://knol.google.com/k/symplectic-biology#>