

RoSBNet: A new international network in Synthetic Biology











What we are and what we do:

- RoSBNet aims to establish international links between electrical/control/computer engineers, physicists, biologists and ELSI members toward Synthetic Biology researches.
- In RoSBNet, members transfer knowledge of their own research domain and develop a fruitful discussion and cross-fertilization of ideas on Synthetic Biology, and ultimately create a cohesive community that can respond effectively to research challenges in Synthetic Biology.

Network Challenge: Building robust synthetic biological networks across organizational layers

Increasing Hierarchy of Organization

Year 1 "Low Level" Structures

Biology Theme:

Constructing simple functional network motifs (switches, oscillators, etc.) from standardised biological parts.

Electrical/Computer Engineering Theme:

The "Art of Electronics" - building transistors, op-amps etc.

Control/Systems Engineering Theme:

Understanding the robustness of simple biological and electrical circuits.

Year 2 "Medium Level" Structures

Biology Theme:

Constructing and modifying signal transduction, protein-protein and metabolic networks.

Electrical/Computer Engineering Theme:

Interconnecting parts to build circuits that perform efficiently and reliably.

Control/Systems Engineering Theme:

Interconnection of subsystems to design robust super-systems; modularity in design.

Year 3 "Higher Level" Structures

Biology Theme:

Bottom up and top down approaches for constructing artificial cells and multi-cellular systems.

Electrical/Computer Engineering Theme:

Organizational principles and protocols in computer networked systems.

Control/Systems Engineering Theme:

Architectural principles of complex networked systems.

Universal Topics and Common Bases

- Measurement methods at different scales and organizational levels.
- Ethical, economical, philosophical, legal and societal issues.
- RoSBNet is co-funded by BBSRC, EPSRC, ESRC, and AHRC. The main activity is an annual,
 3-day workshop. Meetings will be open to all researchers. The organisation of the topics is shown in the figure above. A network core will coordinate all activities.
- Membership will be dynamic. Funding is available for travel and subsistence for 30 Oxford-based, 20 Nation-wide/EU and 10 International members who attend the annual workshop.

Website: http://www.eng.ox.ac.uk/control/RoSBNet

Mailing list: rosbnet-subscribe@maillist.ox.ac.uk

Join Now!!!