

Infrastructure for Systems Biology Europe

About Systems Biology

Profound research breakthroughs that overcome the grand challenges of health, agricultural and industrial biotechnology can only be achieved by utilising the transformational potential of systems biology.

Molecules, cells and organs interact with each other, working together in ways that result in a living organism that is robust and responsive to environmental changes. Systems biology uses computer models which integrate diverse experimental data sets. These models are vital tools for understanding how biological systems function, to a level that allows predicting how they respond to internal and external changes. Questions that can be addressed much more effectively include:

- What goes wrong in plant/animal/human disease and how we can treat and prevent these in a rational and effective way?
- How we can efficiently develop new food products?
- How we can develop safe and effective biopharmaceuticals?
- How we can achieve more efficient and cost effective novel approaches to plant breeding?

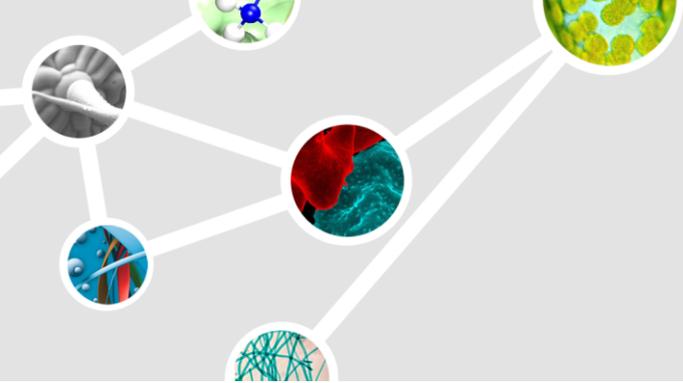
Vision

Creating a European research infrastructure that empowers scientists to understand how living organisms function to a level that allows rational and effective intervention in how biological systems operate. This allows life science researchers to deliver solutions that address societal grand challenges in health and quality of life, bio-economy and sustainability.

About ISBE

ISBE will be a facilitator of this powerful, integrative scientific approach through interconnecting and coordinating a wide range of European resources and services. It will consist of a collaborative network of national systems biology centres that make their collective expertise, resources and services easily accessible for all European researchers through a single online portal.

Currently, the development of ISBE is funded by the European Commission Framework Programme (FP7) and is due to complete its planning phase in Q2 2015. In Autumn 2015 ISBE will commence construction of the European infrastructure, during which a steadily growing portfolio of services and resources will become available. ISBE expects to be fully operational in early 2018.



ISBE's Resources and Services

ISBE will support scientists to overcome their research challenges faster and more cost-effectively by providing access to services, resources and training in the field of systems biology, through:

- Making repositories of systems biology relevant tools, models and data easily accessible.
- Support building, validating and using robust computer models of a broad range of biological systems, based on integrating diverse data sets.
- Driving and promoting standardisation of data, tools and models as well as experimental procedures, ensuring that studies carried out in different laboratories, across countries and sectors are re-usable and can be integrated.
- Providing access to a wide range of education and training programmes to meet the research needs of experts as well as researchers just starting out in systems biology, including graduate and postgraduate systems biology courses and specific user/application training programmes, workshops.

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Users of ISBE

ISBE will be accessible to researchers in academia, hospitals, clinics and industry, irrespective of whether they are experts in systems biology or not, to support the advancement of innovative research and economic development.

