

Research

Systems Science is creating an exciting shift in translational biomedical research. Facilitated by recent technological and conceptual advances, systems science uses an integrative approach to study the complex interactions between the components of a system.

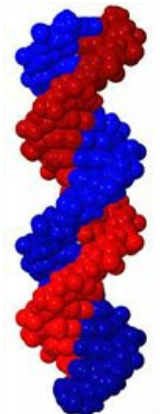
Systems Science for Health (SSFH) is a new research initiative at the University of Birmingham. Launched in 2010, and underpinned by a £1 million investment, it will support the creation of nine [new appointments \(/research/activity/ssfh/recruitment/index.aspx\)](/research/activity/ssfh/recruitment/index.aspx).

The initiative spans three of the five Colleges at the University, with the necessary critical density and complementary expertise to focus multiple disciplines towards several linked goals:

- to better understand mechanisms of disease
- to expedite the discovery of novel biomarkers of disease
- to derive novel targets for therapy
- to characterise susceptibility and responsiveness to treatment

Based upon the University's existing internationally-recognised strengths, Systems Science for Health will target haematological malignancies and lipid-related diseases encompassing inflammation and obesity.

Ultimately this initiative seeks to improve our understanding of health and disease and to facilitate improved patient care.



Why Birmingham?

Systems Science for Health is dependent on several critical factors, all of which Birmingham proudly holds:

- an infrastructure of powerful 'omic' technologies;
- state-of-the-art computational resources;
- a vibrant and research-active hospital within a large and diverse population;
- a genuine commitment to integrative research across a range of disciplines from the underpinning fields of biomathematics, computer science and analytical chemistry through to an extensive clinical trials profile.

The three research cornerstones of the initiative are:

- [Omics technologies \(/research/activity/ssfh/research/omics.aspx\)](/research/activity/ssfh/research/omics.aspx)
- [Bioinformatics \(/research/activity/ssfh/research/bioinformatics.aspx\)](/research/activity/ssfh/research/bioinformatics.aspx)
- [Clinical research \(/research/activity/ssfh/research/clinical-research.aspx\)](/research/activity/ssfh/research/clinical-research.aspx)

Collectively these resources and scientific and clinical expertise are associated with an enthusiasm and proven success of interdisciplinary collaborations which are particularly evident at Birmingham.