



NEWS RELEASE

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ITI LIFE SCIENCES INVESTS £2.5 M IN R&D PROGRAMME TO ADVANCE EFFICIENCY OF SYNTHETIC BIOLOGY

*Innovative new international R&D programme set to increase accuracy and productivity of
synthetic biology processes*

Dundee, Scotland, ITI Life Sciences today announced the launch of its latest international research and development (R&D) programme in the area of synthetic biology. Synthetic biology has been identified as a significant market opportunity to bring together the disciplines of engineering, biology and bioinformatics. Its focus is to make the engineering of biology easier and more predictable. Synthetic biology could improve production methods in a wide variety of markets such as biofuels and energy; environmentally friendly chemicals; drug development and new material fabrication. It is estimated that the synthetic biology research market could be worth over \$1.5 billion by 2013.

ITI Life Sciences has committed £2.5 million to develop technology to enable the efficient assembly of small DNA segments into larger and more complex fragments such as biosynthetic pathways. Current methods for DNA assembly are inefficient and involve resource-intensive biological processes. It is planned that the prototype resulting from the 18-month Genome Segment Assembly (GSA) programme will enable the high-throughput assembly of DNA segments in an automated and reliable way. The technology developed is anticipated to benefit Scottish companies and universities developing synthetic biology applications across the range of market sectors.

ITI Life Sciences has initially commissioned two R&D groups to support the international programme: the microfluidics engineering group at Heriot-Watt University in Edinburgh and Ginkgo BioWorks a young synthetic biology company founded by MIT researchers and based in Boston, MA.

Commenting on the new programme Eleanor Mitchell, Managing Director of ITI Life Sciences, said: "The potential benefits of this programme are hugely exciting. There is a clear market need for new technologies enabling an automated process for large scale DNA assembly. This programme provides a tremendous opportunity for Scotland to gain competitive advantage and capitalise on a relatively immature and innovative market, and we know through our research to date that existing small Scottish companies with the right capabilities are willing to expand into this as a potentially very lucrative

industry. We are delighted to be working with Ginkgo BioWorks and Heriot-Watt University on this programme and I'm confident that their skills and capabilities will prove invaluable over the course of the next 18 months."

Jason Kelly from Ginkgo BioWorks said: "Ginkgo is excited to be working with ITI Scotland and Heriot-Watt University to develop new technologies for assembling large or complex DNA molecules. High-throughput DNA construction is a core technology for synthetic biology that will impact biotechnology in the way the development of integrated circuits impacted the electronics industry. The GSA programme is well-positioned to transition new technologies for DNA assembly into the marketplace."

Dr Will Shu, Lecturer in Microengineering from Heriot-Watt University's School of Engineering and Physical Sciences said, "Synthetic biology is a fascinating emerging field and we are delighted to be involved in this exciting international programme and that our microengineering expertise will help to address some of the most significant challenges faced in the field. We believe the use of integrated microfluidic systems will provide the biologists with a powerful platform for advancing synthetic biology, and that the combined strength of the highly interdisciplinary teams put together by this ITI programme is well placed to achieve this."

Further details can be obtained by visiting the ITI Life Sciences website: www.itilifesciences.com

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About ITI Life Sciences

ITI Life Sciences is a division of ITI Scotland Ltd, a publicly funded organisation focused on driving sustainable economic growth in Scotland through ownership of commercially targeted R&D programmes delivering world-class intellectual assets. ITI Scotland is focused on three market areas: energy, life sciences, and digital media and communications technology.

ITI Life Sciences (Dundee, Scotland) aims to leverage Scotland's research excellence in life sciences to generate new technologies that address future global market opportunities.

This is achieved by identifying and commissioning early stage R&D programmes based on assessing future market needs and developing the required technology assets. The organisation also identifies appropriate commercial partners to exploit these assets globally.

To date, ITI Life Sciences has initiated R&D programmes in commercially attractive areas such as point of care diagnostics, stem cell technologies, predictive drug screening and text mining.

Further information can be found at www.itilifesciences.com

About Heriot-Watt University

- Heriot-Watt University has a special place as a leading institution in science, technology and business and excelling as Scotland's most international university. The University provides more graduates per year across the physical sciences, mathematics, engineering and in the built environment than any other Scottish university.
- The School of Engineering and Physical Sciences covers the subject areas of Chemistry, Physics, Electrical, Electronic and Computer Engineering, Mechanical Engineering and Chemical Engineering.
- It is a core value of the School that degree programmes are accredited by the relevant professional institution or learned society, including the Institution of Engineering and Technology, the Institution of Mechanical Engineers, the Institution of Chemical Engineers, the Institute of Physics and the Royal Society of Chemistry.
- The School has international renown for its research and its close connection with the professional and industrial world of science, engineering and technology, reflecting the importance that the University attaches to the quality of its teaching, research and student support.



<http://www.hw.ac.uk>

About Ginkgo BioWorks

Ginkgo BioWorks is a synthetic biology company focused on making biology easier to engineer. Ginkgo offers kits and services to speed the assembly of DNA and to enable reliable, rapid prototyping of engineered biological systems.

Ginkgo recently received funding from the U.S. National Science Foundation and LifeTech Boston and has opened a new 3400 sq ft laboratory in Boston, MA.



Visit Ginkgo BioWorks at <http://ginkgobioworks.com>.



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