

**Contact:**

Carole Jacques  
Lux Research, Inc.  
617-502-5314  
carole.jacques@luxresearchinc.com

## **SYNTHETIC BIOLOGY TAPS DNA'S BUSINESS POTENTIAL**

"Synbio" sparking changes in energy, healthcare and agriculture

Boston, MA – February 26, 2009 – Promising everything from algae-derived petroleum to personalized medicine to drought-resistant crops, synthetic biology – or synbio – is rapidly sprouting disruptive new technologies in energy, healthcare, specialty chemicals, and agriculture. Despite the diverse and explosive nature of synbio's growth opportunities, however, there's been little or no meaningful commercial analysis of the field to date.

Until now... Following close review of dozens of companies, thousands of practitioners and over \$1 billion in investments, Lux Research this week introduced the synbio sector's first-ever strategic market report. Entitled "Synthetic Biology's Commercial Roadmap," the report provides a definitive summation of potential opportunities enabled through the "discovery, invention, and manufacture of biochemical elements and systems to produce tools, materials, organisms, and devices that meet human needs."

Corporate decision-makers responsible for R&D, partnerships and business development will all find in Lux's roadmap a framework to help them separate hype from reality and identify synbio's real-world economic opportunities. The report offers intelligence on:

- The types of products enabled by synthetic biology, and where and when those products will become commercially competitive in select industries;
- Where the venture opportunities are today, where they will emerge tomorrow;
- What economic and scientific hurdles synbio technologies still need to negotiate.

"As a rule of thumb, we found that the higher up an application is on the scale of life, the more distant its commercialization launch," said Mark Bünger, a Research Director at Lux Research and the report's lead author. "Start-ups sequencing or synthesizing DNA to program microbes, for example, are already operating in established markets and with well-defined products like biofuels, drugs, and specialty chemicals. Meanwhile, engineered cells leading to devices like DNA circuits or biosensors remain at the proof of concept stage."

To map the outlines of the synbio sector, the authors visited leading labs, spoke with scientists and investors, and evaluated 72 companies' activities through a combination of executive interviews and secondary research. They examined 231 patents and 615 scientific papers that comprise the formal body of intellectual property, and spotted 41 private investments in the space to date. Among their key findings:

- Incumbent corporations are investing directly into startups – such as Chevron’s funding of Solazyme – while top VCs like Khosla Ventures and Kleiner Perkins are putting hundreds of millions of dollars into fuel- and medicine-makers like Amyris, LS9 and Gevo.
- Noncorporate organizations like the iGEM competition are using the open-source software movement as a model, and playing a central role in advancing synthetic biology.
- Government funding is more coordinated in Europe, led by the EU’s 6th Framework program (FP6) which provides millions of euros in funding for 18 synthetic biology research and policy initiatives and five economic development projects.

“Countless commercially valuable materials like penicillin and crude oil, and processes like carbon sequestration and bioremediation, all derive from plants’ and animals’ metabolic pathways, which are in turn determined by their genes,” said Bünger. “Synthetic biology has opened new pathways for us to reprogram those metabolic pathways like software, and design products in countless industries with a revolutionary new degree of freedom.”

“Synthetic Biology’s Commercial Roadmap” is part of Lux Research’s Bioscience Intelligence Service. Clients subscribing to this service receive continuous research on the biosciences industry, market trends and forecasts, ongoing technology scouting reports and proprietary data points in the weekly Lux Research Bioscience Journal and on-demand inquiry with Lux Research analysts.

#### **About Lux Research**

Lux Research provides strategic advice and on-going intelligence for emerging technologies. Leaders in business, finance and government rely on us to help them make informed strategic decisions. Through our unique research approach focused on primary research and our extensive global network, we deliver insight, connections and competitive advantage to our clients. Visit [www.luxresearchinc.com](http://www.luxresearchinc.com) for more information.

###