

Synthetic Biology for Advanced Biofuels & Biobased Chemicals

To join the teleconference:

Toll-free number: 1-866-393-9713

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What is synthetic biology?

- ❑ A new interdisciplinary area that involves the application of engineering principles to biology.
- ❑ Combines chemical synthesis of DNA with growing knowledge of genomics to enable researchers to quickly manufacture catalogued DNA sequences and assemble them into new genomes.
- ❑ A tool that enables scientists to design and synthesize modified bacterial chromosomes that can produce useful products.

What can be done with synthetic biology?

- ❑ **Standardized biological parts** -- identify and catalog standardized genomic parts that can be synthesized quickly and used to build new biological protein production systems
- ❑ **Applied protein design** -- re-design existing biological parts for new processes and production of natural, biological product – proteins, enzymes
- ❑ **Natural product synthesis** -- engineer microbes to perform complex multi-step production of natural products
- ❑ **Synthetic genomics** -- design and construct a 'simple' genome for a natural bacterium.

Is synthetic biology radically different from industrial biotechnology?

- Scientists in biotech have studied and adapted microbes to replace chemical reactions and make new products or cleaner manufacturing operations.
- Industrial biotechnology provides tools to enhance the natural mechanisms of biological processes to efficiently produce enzymes, chemicals, polymers, or even everyday products such as vitamins and fuel.
- Synthetic biology is a new tool for the field.

Today's Speakers

- ❑ Stephen del Cardayre, Ph.D., Vice President, Research and Development, LS9.
Dr. del Cardayre has broad responsibility for research and development, external collaborations, and day-to-day operations at LS9.

- ❑ Karl Sanford, Ph.D., Vice President of Technology Development for the Genencor Division of Danisco.
Dr. Sanford led the technology efforts in metabolic pathway engineering for development of BioPDO with Dupont and more recently to produce Biolsoprene™.



More Information:

<http://bio.org/ind/syntheticbiology/>



science for Life



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presentations & speeches	biofuels and ethanol from cellulose

What is Synthetic Biology

Synthetic Biology Explained

Synthetic biology involves the application of engineering principles to biology. Learn about the difference between synthetic biology and systems biology and understand how genetic engineering and industrial biotechnology fit in.

[Read Synthetic Biology Explained](#)

