

## Program at a Glance

Sunday, June 24, 2007

### Workshops

09:00 - 10:30	D2	<b>Tutorial 1: Yeast for Synthetic Biology</b> Stefan Hohmann, Göteborg University
	D8	<b>Tutorial 2: Mathematical Models for SB</b> Diego di Bernardo, TIGEM & Jörg Stelling, ETH Zurich
10:45 - 12:15	D2	<b>Tutorial 3: Microfluidics</b> Nicolas Szita, UCL
	J3	<b>Tutorial 4: iGEM and the MIT Registry</b> Randy Rettberg, MIT

08:00 - 13:00	Foyer	<b>Registration</b>
13:00 - 13:05	G3	<b>Welcome</b> Sven Panke, ETH Zurich

### Keynote 1

13:05 - 13:55	G3	<b>Reading, Writing and Evolving Genomes</b> George Church, Harvard Medical School
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### Design of Parts, Devices and Systems

13:55 - 14:20	G3	<b>I. CoLi Team Project</b> iGEM Imperial
14:20 - 14:45	G3	<b>Synthetic Ecosystems based on Airborne Inter- and Intra-Kingdom Communication</b> Wilfried Weber, ETH Zurich
14:45 - 15:25	Foyer	<b>Coffee</b>
15:25 - 16:00	G3	<b>Evolvability and Hierarchy in Rewired Bacterial Gene Networks</b> Luis Serrano, CRG
16:00 - 16:25	G3	<b>Exploiting a Scaffold Protein as a Platform to Generate Diverse I/O Dynamics in a MAP Kinase Pathway</b> Caleb J. Bashor, University of California, San Francisco
16:25 - 16:50	G3	<b>The Semi-Synthetic 'Minimal Cell' : a Model for Early Living Cells</b> Giovanni Murtas, University of RomaTre
16:50 - 17:25	Foyer	<b>Coffee</b>
17:25 - 18:00	G3	<b>Designing Biological Memory and Logic</b> Pam Silver, Harvard Medical School

18:00 – 18:25	G3	<b>Engineered Human Cells: Say No to Sepsis</b> iGEM Ljubljana
18:25 – 18:50	G3	<b>Towards Large-scale Integrated Nucleic Acid Logic Circuits</b> Georg Seelig, Caltech
19:00 – 22:00	Foyer	<b>Poster Session 1 and Reception</b>

## Monday, June 25, 2007

### Keynote 2

08:00 – 08:50	G3	<b>The Quest for a Minimal Cell: a Synthetic Genomics Approach</b> Ham Smith, The J Craig Venter Institute
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### Concepts for Fabrication

08:50 – 09:25	G3	<b>Reconstructing the genome from hundred pieces: Deinococcus radiodurans</b> Miroslav Radman
09:25 – 09:50	G3	<b>Microbial Genome Reconstruction by Iterative Clone Recombination</b> Rene Warren, BC Cancer Agency
09:50 – 10:15	G3	<b>Microfluidic Gene Synthesis</b> David S Kong, MIT
10:15 – 10:45	Foyer	<b>Coffee</b>

### Parallel Session: Biosafety and Biosecurity, Public Perception

10:45 – 11:00	G3	<b>Framing the Safety and Security Aspects of Synthetic Biology</b> Markus Schmidt, IDC Vienna
11:00 – 11:15	G3	<b>Synthetic Genomics: Biosafety, Biosecurity, and Governance</b> Michelle Garfinkel, The J Craig Venter Institute
11:15 – 11:30	G3	<b>Riding a Roller-Coaster: Policy, Public and Science Interactions in Synthetic Biology</b> Joyce Tait, University of Edinburgh
11:30 – 11:45	G3	<b>Biosecurity Implications of DNA Synthesis and Synthetic Biology</b> Gautam Mukunda, Boston University
11:45 – 11:55	G3	<b>Synthetic Biology and Biosafety: Insight into Control Mechanisms on Worldwide Distribution of Synthetic DNA from an Industrial Perspective</b> Ralf Wagner, Genentax AG
11:55 – 12:10	G3	<b>Open Discussion</b>
12:10 – 13:30	Cafeteria	<b>Lunch</b>

**Parallel Session: Intellectual Property Rights at the Industry/Academy Interface**

- 10:45 – 11:10 G7 **On the Economics of Synthetic Biology: Is Openness Feasible?**  
Joachim Henkel, Technical University Munich
- 11:10 – 11:35 G7 **A novel biosynthetic process concept for advanced  $\beta$ -lactam antibiotics**  
Roel Bovenberg, Royal DSM
- 11:35 – 12:00 G7 **The BP Deal - A Policy Analysis**  
Steven Maurer, University of California at Berkeley

**Concepts for Fabrication**

- 13:30 – 14:05 G3 **Evolution & Synthesis of New Cellular Function: Ribosome Engineering**  
Jason Chin, MRC Lab, Cambridge
- 14:05 – 14:40 G3 **Can We Design De Novo a Bacterial Genome?**  
Antoine Danchin, Institut Pasteur
- 14:40 – 15:05 G3 **Programming Bacteria and Communities for Environmental Release**  
Victor de Lorenzo, CSIC
- 15:05 – 15:35 Foyer **Coffee**

**Concepts for Design**

- 15:35 – 16:10 G3 **What is to be done?**  
Marvin Cassmann, University of California, San Francisco
- 16:10 – 16:45 G3 **Stability and Instability in Complex Reaction Networks: The Big Picture**  
Martin Feinberg, The Ohio State University
- 16:45 – 17:10 G3 **Synthesizing Stochasticity in Biochemical Systems**  
Marc Riedel, University of Minnesota
- 17:10 – 17:40 G3 **Coffee**

**Parallel Session: Synthetic Biology and Ethics**

- 17:40 – 17:55 G3 **Debating the Ethics of Synthetic Biology: Transcending the Current Impasse**  
Nikola Biller-Andorno, University of Zurich
- 17:55 – 18:10 G3 **Hide and Seek: The Ethics of Curiosity and Security in Synthetic Biology**  
Laurie Zoloth, Northwestern University
- 18:10 – 18:30 G3 **Panel replies**
- 18:30 – 19:00 G3 **Discussion**

**Parallel Session: Community Session**

- 17:40 – 17:45 G7 **Introduction**
- 17:45 – 18:05 G7 **iGEM - The International Genetically Engineered Machine Competition**  
Randy Rettberg, MIT
- 18:05 – 18:25 G7 **Synthetic Biology Engineering Research Center (SynBERC)**  
Drew Endy, MIT

- 18:25 – 18:40 G7 **EMERGENCE: a Foundation for Synthetic Biology in Europe**  
Jörg Stelling, ETH Zürich
- 18:40 – 18:50 **Towards a European Strategy for Synthetic Biology: The TESSY Project**  
Sybille Gaisser, Fraunhofer Institute for Systems and Innovation Research
- 19:00 – 22:00 Foyer **Poster Session 2 and Reception**

## Tuesday, June 26, 2007

### Applications 1: Chemistry

- 08:15 – 08:50 G3 **Ribozyme Catalysis and Metabolism in the RNA World**  
Michael Famulok, University of Bonn
- 08:50 – 09:25 G3 **Metabolic Engineering: Engineering Microbes for Production of Biochemical Products**  
Gregory Stephanopoulos, MIT
- 09:25 – 09:50 G3 **Sense Codon Reassignment as Means of Synthesizing Safe Genetically Engineered Microorganism**  
Volker Döring, Isthmus
- 09:50 – 10:15 G3 **From Metabolic Engineering to Metabolic Design: Embodying Novel Core Metabolisms and Containing Genetic Pollution**  
Philippe Marliere, Heurisko
- 10:15 – 10:45 Foyer **Coffee**

### Applications 2: Materials

- 10:45 – 11:20 G3 **Sensing, Regulating and Communicating by Mechanical Force**  
Viola Vogel, ETH Zurich
- 11:20 – 11:55 G3 **Signaling Systems Involving Carbohydrates: Applications to Systems Biology?**  
Peter Seeberger, ETH Zurich
- 11:55 – 12:20 G3 **Engineered Bacterial Chemonavigation**  
Justin Gallivan, Emory University
- 12:20 – 12:45 G3 **3D Living Cell Microarrays Assembled Using Optical Tweezers**  
Winston Timp, MIT
- 12:45 – 14:15 Cafeteria **Lunch**

### Applications 3: Systems

- 14:15 – 14:50 G3 **Production of a Human Artificial Chromosome with a Conditional Centromere**  
Bill Earnshaw, University of Edinburgh
- 14:50 – 15:25 G3 **Control and Design of Mammalian Clocks**  
Hiroki Ueda, RIKEN

15:25 – 15:50	G3	<b>A Massively Parallel Biological Edge Detector</b> Jeff Tabor, University of California, San Francisco
15:50 – 16:30	Foyer	<b>Coffee</b>
16:30 – 17:05	G3	<b>Artificial Signaling Pathways for Pattern Formation and Programmed Tissue Generation</b> Ron Weiss, Princeton University
17:05 – 17:40	G3	<b>Formal Tools for Model-Based Synthetic Biology</b> Hana el-Samad, University of California, San Francisco
<b>Keynote 3</b>		
17:40 – 18:30	G3	<b>Ab Initio Design of Complete Living Organisms</b> Tom Knight, MIT
18:45 – 19:30		<b>Transfer to Conference Dinner Location*</b>
20:00 – 23:30		<b>Conference Dinner at Uto Kulm</b> <b>Poster Award</b>
		<b>End of Conference</b>