



## MEETING AGENDA

# Revolutionizing Agriculture with Synthetic Biology

The Banbury Center, Cold Spring Harbor Laboratory, New York, USA  
December 2-5, 2018

This meeting was funded by the **Cold Spring Harbor Laboratory Corporate Sponsor Program**

### Organizers:

Eleanore Wurtzel, Lehman College, CUNY  
Andrew Hanson, University of Florida  
Claudia Vickers, CSIRO & The University of Queensland

This meeting brought together an international group of synthetic biologists, metabolic engineers, developmental biologists, and biochemists to ‘think big’ about using SynBio to install entirely new metabolic pathways and genetic circuitry in crops and other plants, and to radically improve the efficiency of existing pathways. The group was challenged to think big, examine what the future will look like, what is holding us back from achieving that future, and to develop a roadmap to break down barriers to progress.

## SUNDAY, DECEMBER 2

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**Afternoon** Participant arrivals  
**6:00 pm** Reception, dinner

## MONDAY, DECEMBER 3

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**7:15 am** Breakfast

**8:30 am** **Welcome and Introductory Remarks**  
Rebecca Leshan, The Banbury Center, Cold Spring Harbor Laboratory  
Eleanore Wurtzel, Lehman College, CUNY  
Andrew Hanson, University of Florida  
Claudia Vickers, CSIRO & The University of Queensland



**8:45 am SESSION 1: PRIMARY METABOLISM**

Tobias Erb, Max Planck Institute for Terrestrial Microbiology, Marburg, Germany

Steve Long, University of Illinois, Urbana, USA

Harvey Millar, University of Western Australia, Crawley, Australia

Andrew Hanson, University of Florida, Gainesville, USA

**10:45 am General Discussion**

**11:05 am SESSION 2: SPECIALIZED METABOLISM**

Claudia Vickers, CSIRO Synthetic Biology Future Science Platform, Brisbane, Australia

Eleanore Wurtzel, Lehman College, The City University of New York, Bronx, USA

**12:15 pm Luncheon**

**1:45 pm [continued] SESSION 2: SPECIALIZED METABOLISM**

Toshiya Muranaka, Osaka University, Osaka, Japan

John Shanklin, Brookhaven National Laboratory, Upton, USA

Beth Sattely, Stanford University, Stanford, USA

**3:00 pm General Discussion**

**3:45 pm SESSION 3: ECO-INTERACTIONS**

Pablo Nikel, The Novo Nordisk Foundation Center for Biosustainability,

Guillaume Barbier, JoynBio, Boston, USA

Harro Bouwmeester, University of Amsterdam, Amsterdam, Netherlands

Jonathan Gershenzon, Max Planck Institute for Chemical Ecology, Jena, Germany

**5:25 pm General Discussion and Day 1 Wrap-Up**

**6:00 pm Reception, dinner**

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**TUESDAY, DECEMBER 4**

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**7:15 am Breakfast**

**8:30 am SESSION 4: RADICAL REDESIGN**

Birger Lindberg Møller, University of Copenhagen, Frederiksberg, Denmark



Jennifer Nemhauser, University of Washington, Seattle, USA

Jim Haseloff, University of Cambridge, Cambridge, UK

June Medford, Colorado State University, Fort Collins, USA

Nicola Patron, The Earlham Institute, Norfolk, UK

Anthony Kinney, Corteva Agriscience, Johnston, USA

**11:35 am General Discussion**

**12:15 pm Luncheon**

**2:00 pm SESSION 5: PARTS-PROSPECTING & TOOLS**

Anne Osbourn, John Innes Centre, Norwich, UK

Mark Cooper, The University of Queensland, Brisbane, Australia

Diego Orzáez, Universitat Politècnica de València, Valencia, Spain

Ralph Bock, Max Planck Institute of Molecular Plant Physiology, Potsdam, Germany

Nanette Boyle, Colorado School of Mines, Golden, USA

Lars Nielsen, The Novo Nordisk Foundation Center for Biosustainability, Kongens Lyngby, Denmark

**5:00 pm General Discussion**

**6:00 pm Reception, dinner**

## WEDNESDAY, DECEMBER 5

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**8:30 am SESSION 6: IMPLEMENTING SYNBIO**

Devaki Bhaya, National Science Foundation, Alexandria, USA

Steven Evans, Dow Agrosiences, Indianapolis, USA

Pablo Rabinowicz, U.S. Department of Energy, Washington, DC

**9:45 am General Discussion**

**10:40 am SESSION 7: MEETING WRAP-UP AND DISCUSSION OF NEXT STEPS**

**12:15 pm Luncheon**



## MEETING PARTICIPANTS

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Guillaume Barbier, JoynBio  
Devaki Bhaya, National Science Foundation  
Ralph Bock, Max Planck Institute of Molecular Plant Physiology  
Harro Bouwmeester, University of Amsterdam  
Nanette Boyle, Colorado School of Mines  
Mark Cooper, The University of Queensland  
Tobias Erb, Max Planck Institute for Terrestrial Microbiology  
Steven Evans, Dow Agrosiences  
Jonathan Gershenzon, Max Planck Institute for Chemical Ecology  
Andrew Hanson, University of Florida  
Jim Haseloff, University of Cambridge  
Pam Hines, Science  
Anthony Kinney, Corteva Agriscience  
Stephen Long, University of Illinois  
Juliana de Lima Matos, University of California, Berkeley  
June Medford, Colorado State University  
Harvey Millar, University of Western Australia  
Birger Lindberg Møller, University of Copenhagen  
Toshiya Muranaka, Osaka Univeristy  
Jennifer Nemhauser, University of Washington  
Lars Nielsen, The Novo Nordisk Foundation Center for Biosustainability  
Pablo Nikel, The Novo Nordisk Foundation Center for Biosustainability  
Diego Orzáez, Universitat Politècnica de València  
Anne Osbourn, John Innes Centre  
Nicola Patron, The Earlham Institute  
Pablo Rabinowicz, U.S. Department of Energy  
Elisabeth Raleigh, New England Biolabs  
Beth Sattely, Stanford University  
John Shanklin, Brookhaven National Laboratory  
Claudia Vickers, CSIRO Synthetic Biology Future Science Platform  
Eleanore Wurtzel, Lehman College, The City University of New York