



MEETING AGENDA

Quantitative Approaches to Naturalistic Behaviors

The Banbury Center, Cold Spring Harbor Laboratory, New York, USA
September 23-26, 2018

This meeting was funded by **The Swartz Foundation**

Organizers:

Bill Bialek, Graduate Center at CUNY, New York, USA
Stephanie Palmer, University of Chicago, Chicago, USA
Sam Sober, Emory University, Atlanta, USA

The last decade has seen an explosion of interest in quantitative approaches to real-world behaviors, taming their complexity through more powerful measurements and analyses. This Banbury Center meeting explored progress in this field, with examples drawn from diverse systems – from worms to humans.

SUNDAY, SEPTEMBER 23

Afternoon Participant arrivals

6:00 pm Reception, dinner

MONDAY, SEPTEMBER 24

7:15 am Breakfast

8:30 am **Welcome and Introductory Remarks**

Rebecca Leshan, The Banbury Center, Cold Spring Harbor Laboratory

Bill Bialek, Graduate Center at CUNY, New York, USA;

Stephanie Palmer, University of Chicago, Chicago, USA;

Sam Sober, Emory University, Atlanta, USA



8:45am SESSION 1: Quantifying Behavior – Single Organisms

Gordon Berman, Emory University, Atlanta, USA

Sam Reiter, Max Planck Institute for Brain Research, Frankfurt, Germany

Sandeep Datta, Harvard Medical School, Boston, USA

Mackenzie Mathis, Harvard University, Cambridge, USA

Leslie Osborne, Duke University, Durham, USA

Greg Stephens, VU Amsterdam & OIST, Amsterdam, Netherlands

12:30 pm Luncheon

2:00 pm SESSION 2: Interacting Systems – Quantifying and Modeling Social Behavior

Andrea Cavagna, Institute for Complex Systems, Rome, Italy

Paloma Gonzalez-Bellido, University of Minnesota, St. Paul, USA

Natasha Mhatre, University of Toronto, Canada

Guy Theraulaz, Université Paul Sabatier, Toulouse, France

Ann Kennedy, California Institute of Technology, Pasadena, USA

5:00 pm General Discussion, Outstanding Issues, and End of Day Wrap-Up

6:00 pm Reception, dinner

TUESDAY, SEPTEMBER 25

7:15 am Breakfast at Robertson House

8:30 am SESSION 3A: The Neural Control of Behavior – Part 1

Megan Carey, Champalimaud Center, Lisbon, Portugal

Reza Shadmehr, Johns Hopkins University, Baltimore, USA

Anne Churchland, Cold Spring Harbor Laboratory, Cold Spring Harbor, USA

10:30 am SESSION 3B: The Neural Control of Behavior – Part 2

Matthias Kaschube, Frankfurt Institute for Advanced Studies, Frankfurt, Germany

Emily Mackevicius, Columbia University, New York, USA

Sam Sober, Emory University, Atlanta, USA

12:00 pm General Discussion

12.30 pm Luncheon



2:00 pm SESSION 4: Modeling at the Interface of Sensation and Action

Adrienne Fairhall, University of Washington, Seattle, USA

Chengcheng Huang, University of Pittsburgh, USA

Ilya Nemenman, Emory University, Atlanta, USA

Gaia Tavoni, University of Pennsylvania, Philadelphia, USA

4:30 pm General Discussion: Outstanding Issues and End of Day Wrap-Up

6:00 pm Reception, dinner

WEDNESDAY, SEPTEMBER 26

7:15 am Breakfast

9:00 am SESSION 5: Challenges and Opportunities in the Physics of Behavior

Discussion Chair: Stephanie Palmer, University of Chicago, USA

10:30 am SESSION 6: Meeting Conclusions and Next Steps

Discussion Chairs: Bill Bialek, Stephanie Palmer, Sam Sober

12:00 pm Luncheon

2:00 pm Participant departures



MEETING PARTICIPANTS

Gordon Berman, Emory University
William Bialek, Graduate Center at CUNY
Megan Carey, Champalimaud Center
Andrea Cavagna, Institute for Complex Systems
Anne Churchland, Cold Spring Harbor Laboratory
Sandeep Robert Datta, Harvard Medical School
Adrienne Fairhall, University of Washington
Paloma Gonzalez-Bellido, University of Minnesota
Chengcheng Huang, University of Pittsburgh
Matthias Kaschube, Frankfurt Institute for Advanced Studies
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Emily Mackevicius, Columbia University
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Ilya Nemenman, Emory University
Leslie Osborne, Duke University
Stephanie Palmer, University of Chicago
Sam Reiter, Max-Planck Institute for Brain Research
David Schwab, Graduate Center at CUNY
Reza Shadmehr, Johns Hopkins University
Sam Sober, Emory University
Greg Stephens, VU Amsterdam & OIST
Jerome Swartz, The Swartz Foundation
Gaia Tavoni, University of Pennsylvania
Guy Theraulaz, Université Paul Sabatier