

# CELL DECISION MAKING WORKSHOP

June (9) 10-11 2013

Holiday Inn-Arlington

4610 N Fairfax Drive Arlington, VA

(703) 243-9800

Workshop Sponsors: **National Science Foundation and Rice University**

Meeting Coordinator: **Sara Bradley**, 703-963-1326 cell, [sara.bradley@comcast.net](mailto:sara.bradley@comcast.net)

## SCHEDULE: SUNDAY, JUNE 9, 2013

5:00-8:00pm **Evening Reception**

*Holiday Inn: Lounge  
Wine & Hors d'Oeuvres*

## SCHEDULE: MONDAY, JUNE 10, 2013

8:00-9:00am **Breakfast**

*Holiday Inn: Junior Ballroom  
Breakfast Pastries, Fruit & Beverages*

**Meeting Space: Holiday Inn/Junior Ballroom**

**INTERNET ACCESS CODE: 8057**

- 9:00-9:10 Welcome: **Denise Caldwell**, NSF Division Director, Division of Physics, Directorate for Mathematical and Physical Sciences and **Parag Chitnis**, NSF Division Director, Division of Molecular & Cellular Biosciences
- 9:10-9:20 Opening Remarks: **Herbert Levine**, Rice University
- 9:20-9:40 Talk: *"Five Short Lessons from Bacteriophage Lambda"*  
**Ido Golding**, Baylor College of Medicine
- 9:40-9:50 *Discussion*
- 9:50-10:10 Talk: *"Optimization of Gene Expression Unlocks Latent Antibiotic Resistance"*  
**Adam Palmer**, Harvard University
- 10:10-10:20 *Discussion*
- 10:20-10:40 Talk: *"Mutation, Network, and the Regulation of Evolvability"*  
**Susan Rosenberg**, Baylor College of Medicine
- 10:40-10:50 *Discussion*
- 10:50-11:20 **Coffee Break**
- 11:20-11:40 Talk: *"Recombination and Cooperation Meet Natural Selection"*  
**Rosemary Redfield**, University of British Columbia
- 11:40-11:50 *Discussion*
- 11:50-12:10 Talk: *"Mammalian Cell Fate Decisions on the Epigenetic Landscape: Rebellious Cells"*  
**Sui Huang**, Institute of Systems Biology
- 12:10-12:20 *Discussion*
- 12:20-12:40 Talk: *"Post-Initiation Regulatory Mechanisms for Bacillus Subtilis Differentiation Pathways"*  
**Wade Winkler**, University of Maryland
- 12:40-12:50 *Discussion*

12:50-2:00	<b>Working Lunch</b>	<b>Holiday Inn: Junior Ballroom</b>
2:00-2:20	Talk: "Rethinking Bacterial Persistence" <b>Herbert Levine, Rice University</b>	
2:20-2:30	Discussion	
2:30-2:50	Talk: "Integrated Molecular and Cellular Approach to Bacterial Decision Making" <b>José Onuchic, Rice University</b>	
2:50-3:00	Discussion	
3:30-3:50	Talk: "Cellular Decision-Making in the Context of a Structured Community" <b>Gurol Suel, UC San Diego</b>	
3:50-4:00	Discussion	
4:00-4:30	<b>Coffee Break</b>	
4:30-6:00	Open Discussion: Session Chairs, <b>Gurol Suel, UC San Diego and David Sprinzak, Tel Aviv University</b>	
6:45pm	<b>Group Dinner</b>	<b>Me Jana Restaurant (See below)</b>

Monday Night Dinner Location: **Me Jana Restaurant**, 2300 Wilson Blvd, Arlington, VA  
 (Note: restaurant is physically at the back of this address facing the corner of Clarendon Blvd and N. Adams) 703 465-4440. 2 Miles from the Holiday Inn (Orange Line METRO stop COURTHOUSE).

NOTES: Transportation will depart for Me Jana outside the Holiday Inn entrance at 6:30pm.  
 Cuisine is Middle Eastern served 'family style' (fish and vegetarian options included.)

### SCHEDULE: TUESDAY, JUNE 11, 2013

8:00-9:00am	<b>Breakfast</b>	<b>Holiday Inn: Junior Ballroom</b> Breakfast Pastries, Fruit & Beverages
9:00-9:20	Talk: "The Biophysics of Notch Signaling" <b>David Sprinzak, Tel Aviv University</b>	
9:20-9:30	Discussion	
9:30-9:50	Talk: "The Threshold Level of the Sensor Histidine Kinase Governs Entry into Sporulation in <i>Bacillus subtilis</i> " <b>Masaya Fujita, University of Houston</b>	
9:50-10:00	Discussion	
10:00-10:20	Talk: "Design Principles of <i>Bacillus subtilis</i> Sporulation Decision Network" <b>Oleg Igoshin, Rice University</b>	
10:20-10:30	Discussion	
10:30-11:00	<b>Coffee Break</b>	
11:00-11:20	Talk: "Why So Many Feedbacks in <i>Vibrio Harveyi</i> Quorum Sensing" <b>Ned Wingreen, Princeton University</b>	
11:20-11:30	Discussion	

*Tuesday, June 11 Agenda Continued.*

11:30-11:50 Talk: "The Operating Principles of Decision Circuits from Bacteria to Cancer"  
**Eshel Ben-Jacob, Tel Aviv University/Rice University**

11:50-12:00 *Discussion*

12:00pm-1:00 **Working Lunch**

***Holiday Inn: Junior Ballroom***

1:00-1:20 Talk: "*Evolvability as a constraint on biological mechanisms – a computational perspective.*" **Leslie Valiant, Harvard University**

1:20-1:30 *Discussion*

1:30-1:50 Talk: "*Bacterial Quorum Sensing*" **Bonnie Bassler, Princeton University**

1:50-2:00 *Discussion*

2:00-3:20 Open Discussion: Session Chairs: **Eshel Ben-Jacob, Tel Aviv University/Rice University** and **Ned Wingreen, Princeton University**

3:20-3:30 *Discussion*

3:30pm Closing Remarks and Wrap Up: **NSF and Herbert Levine, Rice University**

---