

“How Molecules Come to Life: Biophysics Vision 2016” Workshop
Westin Gateway Arlington
801 North Glebe Road
Arlington, VA

Ernest Hemingway Salon 2, 2nd Floor
April 28-29, 2011

AGENDA

Format: 15 min to tell a single story, 5 min to outline future challenges, followed by 15 min of discussion

Thursday, April 28

- 8:00 – 8:30 am *Continental Breakfast*
- 8:30 – 8:35 am *Welcome by Kamal Shukla*
Introduction by Ido Golding, Workshop Co-Organizer
- 8:35 - 9:10 am Research Talk 1: *The modulation of transcriptional time series: phenomenology, mechanisms and consequences, Ido Golding*
- 9:10 – 9:45 am Research Talk 2: *Pervasive RNA polymerase pausing and backtracking observed at nucleotide resolution in vivo, L. Stirling Churchman*
- 9:45 - 10:20 am Research Talk 3: *Single-Cell Biophysical Study on Nucleosome-Depleted Region and Gene Regulation, Lucy Bai*
- 10:20 – 10:45 am *Break*
- 10:45 - 11:20 am Research Talk 4: *How does DNA know what time it is? Arjun Raj*
- 11:20 - 11:55 am Research Talk 5: *Transcriptional bursting in gene regulation, Jie Xiao*
- 11:55 - 12:30 pm Research Talk 6: *Dicing while sliding? Sua Myong*
- 12:30 - 1:30 pm *Lunch Buffet*
- 1:30 - 2:05 pm Research Talk 7: *Many-body theory of oogenesis (and other curiosities), Erel Levine*
- 2:05 – 2:40 pm Research Talk 8: *Navigating the cell without a map or compass, Ron Rock*
- 2:40 – 3:15 pm Research Talk 9: *Active forces and flows for cellular polarization, Stefan Grill*
- 3:15 – 3:40 pm *Break*
- 3:40 – 4:15 pm Research Talk 10: *Design principles for regulatory action at a distance: How formins accelerate actin polymerization, Jané Kondev*
- 4:15 – 4:50 pm Research Talk 11: *Mechanical architecture of cell division, Sophie Dumont*
- 4:50 – 5:25 pm Research Talk 12: *How bacteria determine their shape, KC Huang*
- 6:00 – 8:00 pm *Dinner*

“How Molecules Come to Life: Biophysics Vision 2016” Workshop
Westin Gateway Arlington
801 North Glebe Road
Arlington, VA

Ernest Hemingway Salon 2, 2nd Floor
April 28-29, 2011

AGENDA (continued)

Friday, April 29

- 8:00 – 8:30 am *Continental Breakfast*
- 8:30 – 8:35 am *Introduction to the Second Day by Taekjip Ha, Workshop Co-Organizer*
- 8:35 - 9:10 am *Research Talk 13: Simple Biophysical Principles Yield Complicated Biological Functions?*
Jan Liphardt
- 9:10 – 9:45 am *Research Talk 14: Chemotactic adaptation dynamics of individual Escherichia coli cells*, Yann Chemla
- 9:45 - 10:20 am *Research Talk 15: Directed motility in Dictyostelium - the story of Ras*, Herbert Levine
- 10:20 – 10:45 am *Break*
- 10:45 - 11:20 am *Research Talk 16: Beyond traditional model organisms - Biophysical studies of planarian regeneration*, Eva Maria Schoetz
- 11:20 - 11:55 am *Research Talk 17: Fast, scalable, Bayesian spike identification for multi-electrode neural recordings*, Phil Nelson
- 11:55 – 12:15 pm *Workshop Summary Discussion*, Taekjip Ha
- 12:15 – 1:15 pm *Lunch Buffet*
- 1:00 p.m. *Meeting Adjourns*

APPENDIX A: Workshop Participants

“How Molecules Come to Life: Biophysics Vision 2016”

April 28 – 29, 2011

Westin Arlington Gateway, Arlington, VA

Ernest Hemingway Salon 2, 2nd floor

Taekjip Ha, University of Illinois at Urbana-Champaign, Workshop Co-Organizer

<http://bio.physics.illinois.edu/>

Ido Golding, Baylor College of Medicine, Workshop Co-Organizer

<http://www.bcm.edu/biochem/?PMID=11830>

Research Talks:

Lucy Bai, Rockefeller University

<http://www.rockefeller.edu/labheads/crossf/labmembers.php>

Yann R. Chemla, University of Illinois at Urbana-Champaign

<http://research.physics.illinois.edu/chemlalab/>

L. Stirling Churchman, UC – San Francisco

<http://www.leestirlingchurchman.com/Info/About.html>

Sophie Dumont, Harvard University

<http://mitchison.med.harvard.edu/people/Sophie/index.html>

Ido Golding, Baylor College of Medicine

<http://www.bcm.edu/biochem/?PMID=11830>

Stefan Grill, Max Planck Institute, Dresden

<http://www.mpi-cbg.de/research/research-groups/stephan-grill.html>

KC Huang, Stanford University

<http://bioengineering.stanford.edu/faculty/huangKC.html>

Jané Kondev, Brandeis University

<http://www.brandeis.edu/departments/physics/people/faculty/kond.html>

Erel Levine, Harvard University

<http://www.physics.harvard.edu/people/facpages/levine.html>

Herbert Levine, UC – San Diego

<http://herbie.ucsd.edu/~levine/>

Jan Liphardt, UC - Berkeley

<http://www.physics.berkeley.edu/research/liphardt/>

Sua Myong, University of Illinois at Urbana-Champaign

<http://myonglab.bioen.illinois.edu/index.html>

Phil Nelson, University of Pennsylvania

<http://www.physics.upenn.edu/~pcn/index.shtml>

Arjun Raj, University of Pennsylvania

<http://rajlab.seas.upenn.edu/>

Ron Rock, University of Chicago

<http://bmb.bsd.uchicago.edu/index.php>

Eva Maria Schoetz, Princeton University

<http://genomics.princeton.edu/schoetzlab/>

Jie Xiao, Johns Hopkins University

<http://pmcb.jhu.edu/faculty/xiao-profile.html>