



北京大学定量生物学中心
CENTER FOR QUANTITATIVE BIOLOGY

Quantitative Biology 2022

Celebrating the 20th Anniversary of CQB

Dec. 3-4, 2022

Peking University, Beijing, China

IN-PERSON & VIRTUAL

INVITED SPEAKER

Uri Alon	Weizmann Institute of Science, Israel
Naama Barkai	Weizmann Institute of Science, Israel
William Bialek	Princeton U, USA
Michael Elowitz	Caltech, USA
Jing-Dong Jackie Han	Peking U, China
Nan Hao	UCSD, USA
Terry Hwa	UCSD, USA
Mogens Jensen	University of Copenhagen, Denmark
Roy Kishony	Technion-Israel Institute of Technology, Israel
Hao Li	UCSF, USA
Wallace Marshall	UCSF, USA
Kim Sneppen	University of Copenhagen, Denmark
Leihan Tang	HKBU, China
Yuhai Tu	IBM Research, USA
David Weitz	Harvard U, USA
Ned Wingreen	Princeton U, USA
Jianhua Xing	University of Pittsburgh, USA
Lingchong You	Duke U, USA
Michael Zhang	UT Dallas, USA

 Youcai Deng Lecture Hall (Room 101),
Jinguang Life Sciences Building

 www.koushare.com/lives/room/138939

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Programme



Webcast



北京大学定量生物学中心
CENTER FOR QUANTITATIVE BIOLOGY

Host:

Center for Quantitative Biology (CQB) at Peking University
(<http://cqb.pku.edu.cn>)

Organization Committee:

Dr. Chao Tang (Chair, CQB, Peking University, China)
Dr. Luhua Lai (CQB, Peking University, China)
Dr. Qi Ouyang (CQB, Peking University, China)
Dr. Huaiqiu Zhu (CQB, Peking University, China)
Dr. Zhiyuan Li (CQB, Peking University, China)
Dr. Xiaojing Yang (CQB, Peking University, China)

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Webcast

Offline Address:

Youcai Deng Lecture Hall (Room 101), Jinguang Life Sciences Building,
Peking University



Quantitative Biology Symposium 2022

2022 年国际定量生物学论坛

会议日程安排

2022 年 12 月 3 日星期六

Beijing Time	Speaker	Topic
8:30	Opening Remarks (Chao Tang)	
Session 1 (Chair: Zhiyuan Li)		
8:45-9:25	Ned Wingreen Princeton University, USA	Why Do Biomolecular Condensates Ripen So Slowly?
9:25-10:05	Lingchong You Duke University, USA	Horizontal Gene Transfer in Microbial Communities
10:05-10:45	Jianhua Xing University of Pittsburgh, USA	Reconstructing Cell Phenotypic Transition Dynamics from Single Cell Data
10:45-10:55	Tea break	
Session 2 (Chair: Chen Song)		
10:55-11:35	Terry Hwa University of California, San Diego, USA	On the Biological Basis of Coarse-Graining
11:35-12:15	Hao Li University of California, San Francisco, USA	Rejuvenating Aging Human Cells through Transcriptional Reprogramming
12:15-13:30	Lunch	
Session 3 (Chair: Jing-Dong Jackie Han)		
13:30-14:10	Nan Hao University of California, San Diego, USA	Engineering Longevity – Reprogramming Single-Cell Aging in Yeast
14:10-14:30	Zhiyuan Li Peking University, China	Game of Iron: From Sequence to Ecology in Siderophore-Mediated Interactions
14:30-14:50	Zhi Qi Peking University, China	Deciphering Phase-Separation Mechanism of Double Stranded DNA Induced DNA and Protein Co-Condensation
14:50-15:30	Uri Alon Weizmann Institute of Science, Israel	Systems Physiology of Fibrosis
15:30-15:40	Tea break	
Session 4 (Chair: Zhi Qi)		
15:40-16:20	Roy Kishony Technion-Israel Institute of Technology, Israel	Predicting and Inverting Antibiotic Resistance
16:20-17:00	Mogens Jensen University of Copenhagen, Denmark	Oscillations, DNA Damage/Repair and Chaos in Cells
17:00-17:40	Kim Sneppen University of Copenhagen, Denmark	Cell Polarity and Biological Shape Formation

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2022 年国际定量生物学论坛

会议日程安排

2022 年 12 月 4 日星期日

Beijing Time	Speaker	Topic
Session 5 (Chair: Jie Lin)		
8:30-9:10	David Weitz Harvard University, USA	A Walk on Fitness Landscape: Protein Engineering at Scale
9:10-9:50	William Bialek Princeton University, USA	Searching for Scaling in Neurons and Behavior
9:50-10:30	Yuhai Tu IBM Research, USA	Nonequilibrium Physics in Living Systems
10:30-10:40	Tea Break	
Session 6 (Chair: Yihan Lin)		
10:40-11:20	Michael Zhang The University of Texas at Dallas, USA	Spatial Single-Cell Metabolomics for Dissecting Tissue Microenvironment
11:20-12:00	Michael Elowitz California Institute of Technology, USA	Making Synthetic Biology Multicellular
12:00-13:00	Lunch	
Session 7 (Chair: Zexian Zeng)		
13:00-13:40	Wallace Marshall University of California, San Francisco, USA	The Flagellar Length Control System
13:40-14:20	Leihan Tang Hong Kong Baptist University, China	Extended Mean-Field Models of Collective Behaviour in Cell Populations
14:20-14:40	Yihan Lin Peking University, China	Biomolecular Engineering and Synthetic Evolvability in Mammalian Cells
14:40-15:00	Chen Song Peking University, China	Quantitative Computation of Ca^{2+} in Biophysics
15:00-15:10	Tea Break	
Session 8 (Chair: Xiaojing Yang)		
15:10-15:50	Jing-Dong Jackie Han Peking University, China	Linking Old Cells to Young States With lncRNAs
15:50-16:30	Naama Barkai Weizmann Institute of Science, Israel	How Transcription Factors Detect Their Binding Sites in Large Genomes: Intrinsically Disordered Regions as Guides of Binding Specificity
16:30	Closing	