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

Quantitative Biology 2019: Dynamic Signaling in Cells and Embryos

Peking University

Yantai University

Yantai, China

June 22-24, 2019

Hosts:

Center for Quantitative Biology (CQB) at Peking University (http://cqb.pku.edu.cn/en/)
College of Life Sciences at Yantai University (http://www.lsc.ytu.edu.cn/)

Organizing Committee:

Chao Tang (Peking University, China)
Michael B. Elowitz (California Institute of Technology, USA)
Yibao Chen (Yantai University, China)
Feng Liu (Peking University, China)
Xuran Wu (Yantai University, China)
Yihan Lin (Peking University, China)

Conference Website:

http://qbio.pku.edu.cn

Contact:

Dr. Chunmei Li (Peking University, China)
E-Mail: qbio@pku.edu.cn
Phone: +86-138-1120-1829

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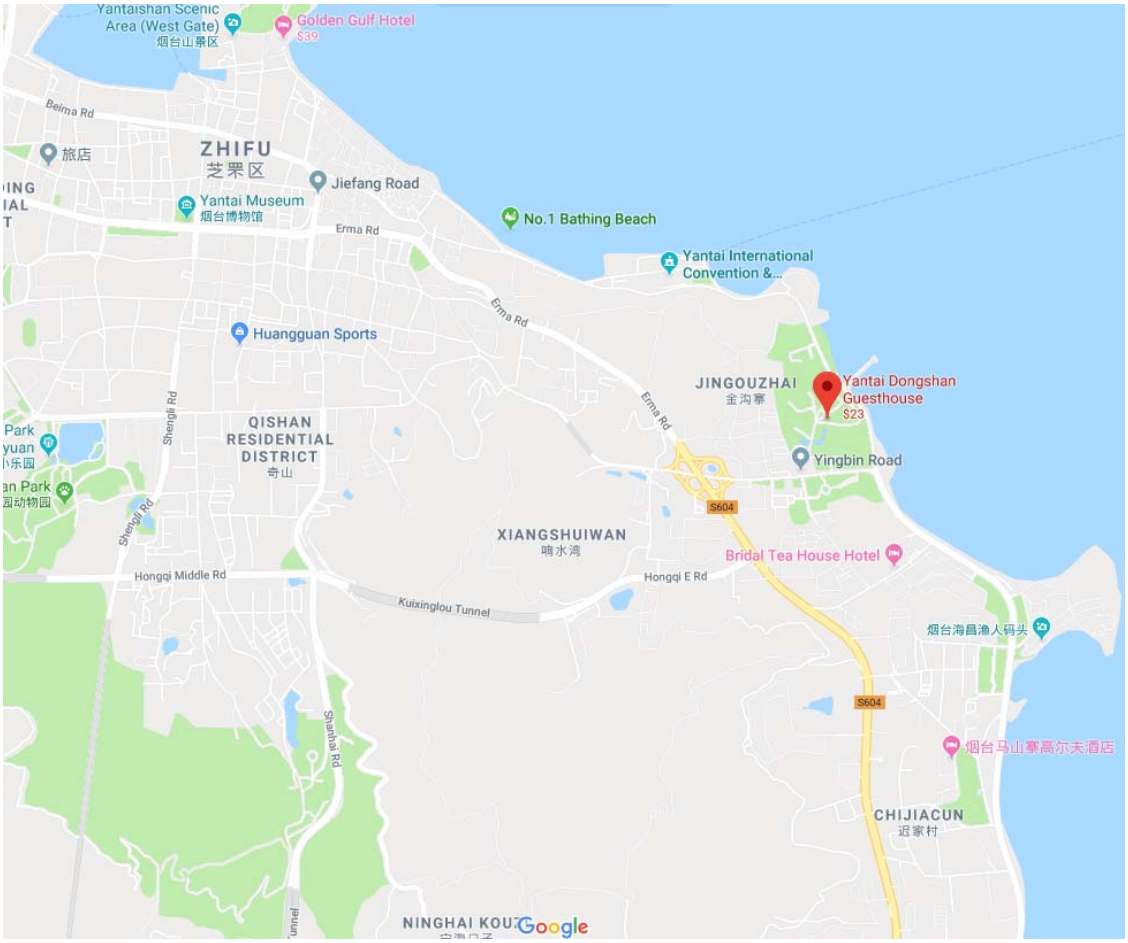
Venue Address:

Bldg 5#, Yantai Dongshan Guesthouse Hotel（烟台东山宾馆5号楼报告厅）
Address: No. 207 Huan Shan Road, Zhi Fu District, Yantai City, Shandong Province, China
Hotel website: www.ytdshotel.com
Hotel Tel.: +86-535-658-1707



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Conference Program

June 21, 2019

Registration: 13:00-17:00 Bldg 5#, Yantai Dongshan Guesthouse Hotel

Day 1 (June 22, 2019)

Registration: 7:00-8:00 Bldg 5#, Yantai Dongshan Guesthouse Hotel

8:30-9:00	**Opening Remarks** (Chaired by Feng Liu/Yihan Lin)	
	8:30-8:40 **Shanli Guo** (President, Yantai University) 8:40-8:50 **Chao Tang** (Director, Center for Quantitative Biology, PKU) 8:50-9:00 A Video Introduction to Yantai University and CQB	
Morning Session **Chair: Chao Tang**		
Time	**Speaker**	**Title**
9:00-9:45	**Michael B. Elowitz** (California Institute of Technology, USA)	Specificity in natural and synthetic protein circuits
9:45-10:15	**Yan Song** (Peking Uiversity, China)	Commitment matters: Timely and robust cell fate commitment in neural stem cell lineages
10:15-10:45	**Coffee Break and Group Photo**	
10:45-11:15	**Robert P. Zinzen** (Max Delbrueck Center, Germany)	Acquisition of neurogenic identities in embryonic development
11:15-11:45	**Jianhua Xing** (University of Pittsburgh, USA)	Studying cell phenotypic transition dynamics with live cell imaging
12:00-13:00	**Lunch**	
Afternoon Session **Chair: Nathalie Dostatni**		
13:30-14:00	**Glenn S. Edwards** (Duke University, USA)	Mechano-chemical regulation of tissue dynamics during *Drosophila* morphogenesis
14:00-14:30	**Konstantin Doubrovinski** (University of Texas Southwestern, USA)	Physical aspects of *Drosophila* gastrulation
14:30-15:00	**Coffee Break**	

15:00-15:10	**Kuan Tao** (*Contributed*) (Peking University, China)	Mathematical models on cell polarity and migration coupled with mechano-chemical factors
15:10-15:20	**Tianmin Wang** (*Contributed*) (Tsinghua University, China)	Precisely coordinated transcription-translation dynamics modularly tune bacterial indole signaling
15:20-15:50	**Joo-Yeon Yoo** (Pohang University of Science and Technology, Korea)	Cell-ECM adhesion in the regulation of population heterogeneity and viral infectivity
15:50-16:20	**Nan Hao** (UC San Diego, USA)	Waddington's landscape of cell aging
16:20-16:40	**Flash Talks (1 minute per person, see page 32 for details)**	
16:40-18:00	**Poster Session**	
18:00-19:30	**Dinner**	
19:45-21:00	**Career Discussion (Students, Postdocs, Faculties)** **Location: Bldg 5#, 2nd Floor, Ba Fang Yuan Conference room.** （2层，八方苑会议室）	

Day 2 (June 23, 2019)

Morning Session **Chair: Michael B. Elowitz**		
Time	**Speaker**	**Title**
8:30-9:00	**Long Cai** (California Institute of Technology, USA)	Single cell spatial genomics by RNA seqFISH+
9:00-9:30	**Robert E. Campbell** (University of Alberta, Canada)	Engineering genetically-encoded fluorescent indicators for dynamic visualization of cell signaling and metabolism
9:30-10:00	**Jordi Garcia-Ojalvo** (University Pompeu Fabra, Spain)	Metabolic consequences of ion-flux dynamics in bacteria
10:00-10:30	**Coffee Break**	

10:30-11:00	**Luhua Lai** (Peking University, China)	Tuning TNF receptor signalling output by adjusting TNF binding kinetics
11:00-11:30	**Hao Yuan Kueh** (University of Washington, USA)	Temporal scalability in developmental gene circuits
12:00-13:00	**Lunch**	
Afternoon Session **Chair: Luhua Lai**		
13:30-14:00	**Ping Wei** (Peking University, China)	Synthetic NF-κB: a building approach to study complex signaling behaviors
14:00-14:30	**Manu** (University of North Dakota, USA)	Understanding hematopoietic cell-fate specification using both top-down and bottom-up modeling approaches
14:30-15:00	**Seung Joong Kim** (Korea Advanced Institue of Science and Technology, Korea)	Integrative structure and functional anatomy of a nuclear pore complex (NPC)
15:00-15:30	**Coffee Break**	
15:30-15:45	**Xiaojun Tian** (*Contributed*) (Arizona State University, USA)	Restore the memory of gene circuit by uncoupling growth-mediated feedback
15:45-15:55	**Hsu Ian** (*Contributed*) (University of Toronto, Canada)	Quantifying stochastic dynamics of Crz1 and their evolution
15:55-16:25	**Timothy Sanders** (National University of Singapore, Singapore)	Timing and scaling of Bicoid gradient interpretation
16:25-16:55	**Feng Liu** (Peking University, China)	Illuminating precise developmental patterning in *Drosophila* embryos
17:00-18:00	**Poster Session**	
18:00-19:30	**Dinner (Reception for Invited Speakers)**	

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Day 3 (June 24, 2019)

Morning Session Chair: Lucas Carey		
Time	**Speaker**	**Title**
8:30-9:00	**Daniel R. Larson** (National Cancer Institue, USA)	Dynamic imaging of nascent RNA reveals general principle of transcription dynamics and widespread recursive splicing
9:00-9:30	**Yi Yang** (East China University of Science and Technology, China)	Fluorescent RNA tag reveals mRNA dynamics and stochastic translation in live cells
9:30-10:00	**Masahiro Ueda** (RIKEN Quantitative Biology Center, Japan)	Automated single molecule imaging in living cells
10:00-10:30	**Coffee Break**	
10:30-11:00	**Wenlei Xiao** (Beihang University, China)	High-accurate reconstruction of cell lineages from large-scale live imaging data
11:00-11:30	**Yihan Lin** (Peking University, China)	Functional roles of stochastic pulsing in evolution
12:00-13:00	**Lunch**	
Afternoon Session Chair: Qi Ouyang		
13:30-14:00	**Nathalie Dostatni** (Sorbonne University, French)	Imaging transcription in living fruit fly embryos
14:00-14:30	**Huy Tran** (Institut Curie, French)	How data driven modelling can help understand patterning
14:30-15:00	**Coffee Break**	
15:00-15:10	**Jingxiang Shen** (*Contributed*) (Peking University, China)	Reverse engineering biological regulation network with deep neural network
15:10-15:20	**Shujuan Wang** (*Contributed*) Beijing Institute of Lifeomics, China)	Dynamic analysis on ERBB complex assembly provides mechanistic insight on drug sensitivity

15:20-15:30	**Shouwen Wang** (*Contributed*) (Harvard University, USA)	Emergence of collective oscillations in adaptive cells
15:30-15:40	**Sheng-Yi Wu** (*Contributed*) (University of Alberta, Canada)	Optimizing genetically encoded indicators for sensitive detection of potassium ion dynamics
15:40-16:25	**Roy Kishony** (Technion-Israel Institute of Technology, Israel)	TBD
16:25-16:55	**Poster Awards and Closing Remarks**	