

# qBio 2025 Conference Agenda

Location: Bldg 1#, Zhongguanyuan Global Village PKU ( 中关村新园 1 号楼群英厅 )

- 21-Jul**      **Registration 13: 30-18: 00**    **Bldg 1 # , Zhongguanyuan Global Village PKU ( 中关村新园 1 号楼大厅 )**
- 22-Jul**      **Registration 08: 20-08: 50**    **Bldg 1 # , Zhongguanyuan Global Village PKU ( 中关村新园 1 号楼群英厅 )**

## 22-Jul

Morning		Speaker	Title
9:00	9:10	Jing-Dong Jackie Han	Welcome speech
9:10	9:55	Nikolaus Rajewsky	Spatial omics to predict disease trajectories
9:55	10:30	Jin Wang	Uncovering underlying physical principles and driving forces of cancer from single-cell transcriptomics
10:30	11:00	Coffee break	
11:00	11:45	Jianhua Xing	Dynamical systems theory modeling in the big data era
11:45	12:00	Jin Yu	Modeling, Simulation, and Learning on Transcription Machinery
12:00	12:15	Zhuoyi Song	When Stochastic Timing Matters: Molecular Regulation of Signal Refractoriness Shapes Vision in the Fly Eye
12:15	13:30	Lunch	
Afternoon			
13:30	14:15	Thomas A. Rando	Emergent properties of muscle stem cells during muscle regeneration
14:15	14:50	Yifan Yang	A Mathematical Theory of Aging and Its Implications for Healthspan Extension
14:50	15:05	Zachary Gao Sun	Feedback between F-actin organization and active stress govern criticality and energy localization in the cell cytoskeleton
15:05	15:20	Yuansheng Cao	Quantifying subunit exchange between protein complexes in cyanobacterial circadian clock
15:20	15:50	Coffee break	
15:50	16:35	Kevin Foster	Competition and warfare in bacteria and the human microbiome
16:35	17:10	Lei Dai	Quantitative ecology of host-associated microbiomes
17:10	17:25	Po-Yi Ho	Emergent simplicity in bacterial growth under complex nutrient environments
17:25	17:40	Fajia Sun	Dynamic Adaptive Sampling for Enhanced Recovery and Characterization of Rare Species
Evening			
18:00	20:00	Dinner & Poster Session	

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## 23-Jul

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### Morning

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9:00	9:45	David Weitz	Cell Rheology, Revisited
9:45	10:20	Adrienne Roeder	Stay smooth or buckle: coordination of cell growth across the Arabidopsis sepal
10:20	10:50	<i>Coffee break</i>	
10:50	11:35	Robert H. Austin	Inter-Agent Information Entropy Transfer from Bacteria to Cyborgs
11:35	11:50	Dongliang Zhang	An altruistic resource-sharing mechanism for synchronization: The energy-speed-accuracy tradeoff
11:50	12:05	Shiling Liang	Thermodynamic Space: Operational Limits of Nonequilibrium Chemical Reaction Networks
12:05	13:30	<i>Lunch</i>	

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## 24-Jul

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### Morning

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9:00	9:45	Wallace Marshall	Learning without neurons in a single cell
9:45	10:20	Ke Li	Foundation models for genomics: From predictive modeling to biological design, towards AI scientists and future
10:20	10:50	<i>Coffee break</i>	
10:50	11:35	Michael Shelley	Self-organizing dynamics in cellular and multi-cellular systems
11:35	12:10	Sean Megason	Algorithms for Creating Form
12:10	13:30	<i>Lunch</i>	

### Afternoon

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13:30	14:05	Jie Lin	Universal laws emerging from competition between genes for limiting Resources
14:05	14:20	Hanqing Guo	Inhibition of Cellular Contractility Reveals Compression-enabled Mechanical Bistability during Epithelial Folding
14:20	14:35	Xiaojing Yang	Synthetic Conscription: Achieving Stable Labor Division with Rational Design of Gene Circuitry
14:35	14:50	Zitong Wang	A cellular solution to a robotics problem
14:50	15:35	Yuhai Tu	Nonequilibrium thermodynamics in living systems: Towards answering Schrödinger's question
15:35	15:45	Chao Tang	Closing Speech