

Abstracts of papers presented
at the 2024 Cold Spring Harbor Asia Conference

BACTERIAL INFECTION & HOST DEFENSE

May 20–May 24, 2024

Arranged by

Elizabeth Hartland, *Hudson Institute of Medical Research*
Nina Salama, *Fred Hutchinson Cancer Center*
Feng Shao, *National Institute of Biological Sciences*
Jörg Vogel, *University of Würzburg*
Birgitta Normark, *Karolinska Institute*



Cold Spring Harbor Conferences Asia
Cold Spring Harbor Laboratory



BACTERIAL INFECTION & HOST DEFENSE

Monday, May 20 – Friday, May 24, 2024

Monday	7:00 pm	1 Opening / Keynote Session
Tuesday	9:00 am	2 Host-pathogen Immunology and Inflammation
Tuesday	2:00 pm	Poster Session
Tuesday	3:00 pm	<i>Chinese Tea and Beer Tasting</i>
Tuesday	7:00 pm	3 Microbial Communities and Interactions
Wednesday	9:00 am	4 The Host Environment and Bacterial Infection
Wednesday	2:00 pm	<i>Visit to Old Suzhou*</i>
Wednesday	7:00 pm	5 New Developments in Pathogen Biology and Control
Thursday	9:00 am	6 Cell Death and Chronic Bacterial Infections
Thursday	2:00 pm	7 Innate Immune Response to Infection
Thursday	6:00 pm	Cocktails and Banquet
Friday	9:00 am	8 Cell Biology of Bacterial Infection

Oral presentation sessions are located in the CSHA Auditorium
Poster session and Chinese Tea & Beer Tasting are in the Lake Front Hall.

Cocktail social hour is held outside in the Suz Garden.

Old Suzhou visits depart from the CSHA lobby

**optional tour requires additional fee.*

Meal locations and times are as follows:

Lunch: Main Cafeteria 12:00am - 1:30pm

Dinner: Main Cafeteria 6:00pm - 7:30pm

Banquet: Suz Garden 7:00pm

More information will be available at CSHA office.

(Map at the end of this abstract book)

PROGRAM

MONDAY, May 20—7:00 PM

SESSION 1 OPENING / KEYNOTE SESSION

Chairperson: **Nina Salama**, Fred Hutchinson Cancer Center, Seattle, Washington, USA

WELCOME and INTRODUCTION

Feng Shao

National Institute of Biological Sciences

KEYNOTE SPEAKER

A zebrafish guide to TB pathogenesis and treatment

Lalita Ramakrishnan [45'+10']

Presenter affiliation: University of Cambridge, Cambridge, United Kingdom.

1

TUESDAY, May 21—9:00 AM

SESSION 2 HOST-PATHOGEN IMMUNOLOGY AND INFLAMMATION

Chairpersons: **Feng Shao**, National Institute of Biological Sciences, Beijing, China

Sho Yamasaki, Osaka University, Suita, Japan

Self-recognition through immune sensors for bacteria

Sho Yamasaki [20'+10']

Presenter affiliation: Osaka University, Suita, Japan.

2

Innate immunity in tuberculosis—Host immune defense vs pathogen pathogenicity

Jing Wang, Lihua Qiang, Dongdong Zhao, Zehui Lei, Cui Hua Liu [20'+10']

Presenter affiliation: Institute of Microbiology, Chinese Academy of Sciences, Beijing, China.

3

***Toxoplasma gondii* macrophage migration inhibitory factor shows anti-*Mycobacterium tuberculosis* potential via AZIN1/STAT1 interaction**

Chul-Su Yang [10'+5']

Presenter affiliation: Hanyang University, Ansan, South Korea.

4

Shigella evades pyroptosis by arginine ADP-ribosylation of caspase-4/11

Zilin Li, Wang Liu, Jiaqi Fu, Sen Cheng, Yue Xu, Zhiqiang Wang, Xiaofan Liu, Xuyan Shi, Yaxin Liu, Xiangbing Qi, Xiaoyun Liu, Jingjin Ding, Feng Shao [10'+5']

Presenter affiliation: National Institute of Biological Sciences, Beijing, China.

5

Break

***Mycobacterium tuberculosis* produces D-serine under hypoxia to limit CD8+ T cell-dependent immunity in mice**

Hongyu Cheng, Zhe Ji, Yang Wang, Shenzhi Li, Tianqi Tang, Fei Wang, Cheng Peng, Xiangyang Wu, Yuanna Cheng, Zhonghua Liu, Mingtong Ma, Jie Wang, Xiaochen Huang, Lin Wang, Lianhua Qin, Haipeng Liu, Jianxia Chen, Ruijuan Zheng, Carl G. Feng, Lilin Ye, Hua Yang, Baoxue Ge [10'+5']

Presenter affiliation: Shanghai Key Laboratory of Tuberculosis, Shanghai, China.

6

Structural and functional mechanisms of pathogenic bacterial effectors

Songying Ouyang [20'+10']

Presenter affiliation: Fujian Normal University, Fuzhou, China.

7

Ionophores, pore forming toxins and human inflammasome sensors

Franklin Zhong [20'+10']

Presenter affiliation: NTU Singapore, Singapore.

8

Collective fountain-like flow and fractal wrinkling drive bacterial community morphogenesis

Boyang Qin, Howard Stone, Ned Wingreen, Bonnie Bassler [10'+5']

Presenter affiliation: Shanghai Jiao Tong University, Shanghai, China.

9

POSTER SESSION

- Splenic red pulp macrophages eliminate liver-resistant *Streptococcus pneumoniae* during bloodstream infection**
Haoran An, Yijia Huang, Zhifeng Zhao, Xueting Huang, Kunpeng Li, Jing-Ren Zhang
Presenter affiliation: Tsinghua University, Beijing, China; Peking University Health Science Center, Beijing, China. 10
- Study of the nosocomial pathogen *Acinetobacter baumannii* Proteins that are involved in host-pathogen interactions**
Jiayuan Chen
Presenter affiliation: Zhejiang University-University of Edinburgh Institute, Haining, Zhejiang, China. 11
- Divergent functional evolution of sRNA processed from the 3' UTR of conserved hexose phosphate transporter coding gene *uhpT***
Xiaomin Chen, Chuan Wang
Presenter affiliation: Fudan University, Key Laboratory of Medical Molecular Virology (MOE/NHC/CAMS), Shanghai, China 12
- Investigating molecular decision points that determine colorectal cancer colonization by *Fusobacterium nucleatum***
Valentina Cosi, Falk Ponath, Jörg Vogel
Presenter affiliation: Helmholtz Institute for RNA-based Infection Research, Würzburg, Germany. 13
- An ancient ecospecies of *Helicobacter pylori* reveals link between diet and the interaction between bacteria and host**
Daniel Falush, Elise Tourrette, Sarah Svensson, Kaisa Thorell
Presenter affiliation: Shanghai Institute of Immunity and Infection, Shanghai, China. 14
- The *lasR*-deficient *Pseudomonas aeruginosa* genotype PA154197 maintains its virulence factor pyocyanin production by suppressing the AlgR-mediated gene repression**
Mengyao Guo, Zeling Xu, Aixin Yan
Presenter affiliation: the University of Hong Kong, Hong Kong, China. 15

Structural mechanisms of calmodulin activation of *Shigella* effector OspC3 to ADP-ribosylate caspase-4/11 and block pyroptosis

Yanjie Hou, Huan Zeng, Zilin Li, Na Feng, Fanyi Meng, Yue Xu, Lin Li, Feng Shao, Jingjin Ding

Presenter affiliation: Institute of Biophysics, Chinese Academy of Sciences, Beijing, China.

16

Mitochondrial injury induced by a *Salmonella* genotoxin triggers the proinflammatory senescence-associated secretory phenotype

Yu-Ting Hsu, Han-Yi Chen, Wan-Chen Hsieh, Yu-Chieh Liu, Huei-Ying Li, Po-Yo Liu, Shao-Chun Hsu, An-Chi Luo, Wei-Chen Kuo, Yi-Jhen Huang, Gan-Guang Liou, Meng-Yun Lin, Chun-Jung Ko, Hsing-Chen Tsai, Shu-Jung Chang

Presenter affiliation: National Taiwan University, Taipei, Taiwan, China.

17

H2BK16 acetylation promotes macrophage antibacterial innate immunity through the nuclear factor ID3

Wangju Huang, Jinjing Ni, Danni Wang, Zuoqiang Wang, Jingchen Yu, Ning Zhou, Tao Zhou, Huang Tang, Bingjie Wen, Hong Yan, Yu-Feng Yao

Presenter affiliation: Shanghai Jiao Tong University School of Medicine, Shanghai, China.

18

Brain endothelial GSDMD activation determines inflammatory blood-brain-barrier breakdown

Chao Wei, Wei Jiang, Ruiyu Wang, Haoyu Zhong, Huabin He, Xinwei Gao, Shilin Zhong, Fengting Yu, Qingchun Guo, Li Zhang, Lisa D.J. Schiffelers, Bin Zhou, Martin Trepel, Florian I. Schmidt, Minmin Luo, Feng Shao

Presenter affiliation: National Institute of Biological Sciences, Beijing, China.

19

***Salmonella* *adiA* mRNA encoding a core enzyme of acid resistance system releases a regulatory sRNA from its 3'UTR in acidic and anaerobic environments**

Takeshi Kanda, Fang Liu, Yanjie Chao, Masatoshi Miyakoshi

Presenter affiliation: University of Tsukuba, Tsukuba, Japan.

20

Intra-macrophage RIL-seq uncovers an RNA antagonist of the *Salmonella* virulence-related small RNA PinT

Hoda Kooshapour, Gianluca Matera, Elisa Venturini, Jörg Vogel, Alexander J. Westermann

Presenter affiliation: Helmholtz Centre for Infection Research (HZI), Würzburg, Germany; University of Würzburg, Würzburg, Germany.

21

- Episymbiotic Saccharibacteria TM7x modulates susceptibility of its host bacteria to phage infection and promotes their coexistence in the oral microbiome**
Shuai Le
 Presenter affiliation: Army Medical University, Chongqing, China. 22
- Temperature downshifts induce biofilm formation in *P. aeruginosa* through the SiaABCD signaling module and the downstream c-di-GMP/FleQ/Psl pathway**
Yanran Li, Zhe Chen, Aixin Yan
 Presenter affiliation: The University of Hong Kong, Hong Kong, China. 23
- Point mutation of global regulator ArgR leads to the reduced CPS production of hypervirulent and hypermucoviscous *Klebsiella pneumoniae* via the exhaustion of common sugar precursors**
Yue Li, Kai-hu Yao
 Presenter affiliation: Beijing Children's Hospital, Capital Medical University, Beijing, China. 24
- Bacterial biofilms and infection**
Xiaoxiao Liu
 Presenter affiliation: Laboratory Medicine, Guangzhou, China. 25
- Diagnosis and treatment for Shiga toxin-producing *Escherichia coli* associated hemolytic uremic syndrome**
Yang Liu, Hatim Thaker, Chunyan Wang, Zhonggao Xu, Min Dong
 Presenter affiliation: the First Hospital of Jilin University, Changchun, China. 26
- Role and mechanism of globotriaosylceramide in acute kidney injury induced by aristolochic acid**
Yang Liu, Hatim Thaker, Jie Zhang, Zhonggao Xu, Min Dong
 Presenter affiliation: the First Hospital of Jilin University, Changchun, China. 27
- Pneumococcal tolerance to antibiotics involves modulation of intracellular pH and zinc homeostasis**
Qing Meng, Yuna Zeng, Jing-Ren Zhang
 Presenter affiliation: School of Basic Medical Sciences, Beijing, China; Tsinghua-Peking Center for Life Sciences, Beijing, China. 28

- The role of CpaA metalloproteinase in intestinal colonization of *Acinetobacter baumannii***
Zitong Pan, Zhiren Wang, Henan Li
 Presenter affiliation: Peking University People's Hospital, Beijing, China. 29
- LLPS condensates of Fha initiate the inside-out assembly of the type VI secretion system**
Tong-Tong Pei, Ying An, Xing-Yu Wang, Han Luo, Yumin Kan, Hao Li, Ming-Xuan Tang, Zi-Yan Ye, Jia-Xin Liang, Tao Jian, Hao-Yu Zheng, Zeng-Hang Wang, Xiaoye Liang, Mingjie Zhang, Xiaotian Liu, Tao Dong
 Presenter affiliation: Southern University of Science and Technology, Shenzhen, China. 30
- Mycobacterium tuberculosis* suppresses antimicrobial peptides expression by dehydrogenating host L-alanine**
Cheng Peng, Yuanna Cheng, Mingtong Ma, Qiu Chen, Shanshan Liu, Hongyu Cheng, Lin Wang, Baoxue Ge
 Presenter affiliation: Shanghai Key Laboratory of Tuberculosis, Shanghai, China; Tongji University School of Medicine, Shanghai, China. 31
- A global search for high-susceptibility targets of programmable RNA antibiotics**
Linda Popella, Jakob Jung, Lars Barquist, Joerg Vogel
 Presenter affiliation: University of Wurzburg, Wurzburg, Germany. 32
- The RNA-binding protein RbpB is a central regulator of polysaccharide utilization in gut *Bacteroides***
Ann-Sophie Rüttiger, Daniel Ryan, Luisella Spiga, Vanessa Lamm-Schmidt, Gianluca Prezza, Sarah Reichardt, Lars Barquist, Franziska Faber, Wenhan Zhu, Alexander J. Westermann
 Presenter affiliation: University of Würzburg, Würzburg, Germany; Helmholtz Centre for Infection Research (HZI), Würzburg, Germany. 33
- Investigating the evolutionary importance of Cas9 Sumoylation in the context of host-pathogen interactions**
Umut Sahin
 Presenter affiliation: Bogazici University, Istanbul, Turkey. 34

***Helicobacter pylori* virulence and its interactions with gastric microbiome**

Camilia Metadea A. Savitri, Kartika A. Fauzia, Ricky I. Alfaray, Langgeng A. Waskito, Dalla Doohan, Tomohisa Uchida, Takashi Matsumoto, Muhammad Miftahussurur, Yoshio Yamaoka
Presenter affiliation: Oita University, Faculty of Medicine, Yufu, Japan; Institute of Tropical Disease, Universitas Airlangga, Surabaya, Indonesia.

35

Recognition and maturation of IL-18 by caspase-4 noncanonical inflammasome

Xuyan Shi, Qichao Sun, Yanjie Hou, Huan Zeng, Yong Cao, Mengqiu Dong, Jingjin Ding, Feng Shao
Presenter affiliation: National Institute of Biological Sciences, Beijing, China.

36

GPR161 mediates the phagocytosis of mycobacteria by macrophages via regulating cytoskeletal rearrangement

Rongfeng Sun, Ziya Re, Jingfeng Tong, Yue Ding, Lu Meng, Bo Yan, Qian Gao
Presenter affiliation: Fudan University, Shanghai, China.

37

Cell death plays a critical role in sepsis caused by a mixed bacterial infection in mice

Ye-hsuan Sun, Lang Li, Boyu Liu, Yingying Zhang
Presenter affiliation: School of Life Sciences, Xiamen , China.

38

Reverse ecology—Harnessing gene association signals for understanding pathogen adaptation strategies

Sarah L. Svensson, Zhizhou Jia, Huiqi Wen, Yanjie Chao, Chao Yang, Daniel Falush
Presenter affiliation: Shanghai Institute of Immunity and Infection / Chinese Academy of Sciences, Shanghai, China.

39

Design, construction, and mechanism studies of bacteria-based protein drug delivery

Ming-Xuan Tang, Tao Dong
Presenter affiliation: Southern University of Science and Technology, Shenzhen, China.

40

Natural antibodies to capsules mediate rapid bacterial capture by liver macrophages

Xianbin Tian, Yanni Liu, Jing-Ren Zhang
Presenter affiliation: Tsinghua University, School of Medicine, Beijing, China.

41

- Identification of a non-canonical RNA-binding bacterial effector protein that degrades host mRNA**
Joshua von Ameln, Kitty McCaffrey, Hariharan Sivaraman, Wilson Wong, Elizabeth L. Hartland
 Presenter affiliation: Hudson Institute of Medical Research, Clayton, Australia; University of Bonn, Bonn, Germany. 42
- Probiotic *Akkermansia* aggravates *Salmonella typhi* infection by promoting microfold cells**
Jun Wang
 Presenter affiliation: Institute of Microbiology CAS, Beijing, China. 43
- Structural mechanisms of Tad pilus assembly and its interaction with an RNA virus**
Yuhang Wang, Matthew Theodore, Zhongliang Xing, Utkarsh Narsaria, Zihao Yu, Lanying Zeng, Junjie Zhang
 Presenter affiliation: Texas A&M University, College Station, Texas. 44
- The cross-talk between c-di-GMP and FlrA regulates the transition from the planktonic to biofilm lifestyles**
Zhihao Wu
 Presenter affiliation: Huazhong Agricultural University, Wuhan, China. 45
- The physiological and therapeutic roles of PrsA in *Streptococcus pyogenes***
Zhao-Yi Wu, Chian-Yu Lai, Chao-Hsien Liu, Yung-Chi Chang
 Presenter affiliation: National Taiwan University, College of Medicine, Taipei, Taiwan, China. 46
- Functional diversity of T6SS effectors in a *Pseudomonas aeruginosa* clinical isolate**
Liwen Wu, Tao Dong
 Presenter affiliation: Southern University of Science and Technology, Shenzhen, Guangdong, China. 47
- Bacterial TPR-TIR protein elicits host immunity against phage infection**
Min Wu, Ying Lu
 Presenter affiliation: Wenzhou Institute, University of Chinese Academy of Sciences, Wenzhou, China. 48

- Phosphate starvation induces L-Ara4N modification of lipid A and resistance to cationic antimicrobial compounds via a magnesium-iron-BasSR signaling pathway**
 Guangming Zhang, Aixin Yan
 Presenter affiliation: The University of Hong Kong, Hong Kong, China. 49
- Bartonella BepE inhibits cell fragmentation induced by BepC through mimicking host GDF to activate Rab5C**
 Chunyan Wang, Yuhao Cai, Mengqin Zhou, Meng Wang, Menglin Xu, Fuchao Zhong, Wenjun Shu, Haoran Zhang, Ladjal Samra, Congli Yuan
 Presenter affiliation: Shanghai Jiao Tong University, Shanghai, China. 50
- An integrative type I-F Cascade-based CRISPRi library enabled unlocking the secondary metabolites functions in the common pathogen *Pseudomonas aeruginosa***
Guangming Zhang, Yingtong Su, Zelin Xu, Aixin Yan
 Presenter affiliation: The University of Hong Kong, Hong Kong, China. 51
- Termination mechanism of the type VI secretion system (T6SS) in *Vibrio cholerae***
Yiqiu Zhang, Tao Dong
 Presenter affiliation: Southern University of Science and Technology, Shenzhen, China. 52
- Efficient delivery of cargo protein by engineering the Hcp of H1-T6SS in *Pseudomonas aeruginosa***
Yajie Zhao, Tao Dong
 Presenter affiliation: Shanghai Jiao Tong University, Shanghai, China. 53
- Structure and disassembly mechanism of Type VI secretion system protease ClpV**
Hao-Yu Zheng, Tao Dong
 Presenter affiliation: Shanghai Jiao Tong University, Shanghai, China. 54
- A global survey of small interactors identifies KhpA and KhpB as major RNA-binding proteins in *Fusobacterium nucleatum***
Yan Zhu, Falk Ponath, Valentina Cosi, Jörg Vogel
 Presenter affiliation: Helmholtz Institute for RNA-based Infection Research, Würzburg, Germany. 55

TUESDAY, May 21—3:00 PM

Chinese Tea and Beer Tasting

SESSION 3 MICROBIAL COMMUNITIES AND INTERACTIONS

Chairpersons: **Sam Forster**, Hudson Institute of Medical Research, Clayton, Australia
Tao Dong, Southern University of Science and Technology, Shenzhen, China

Building a big contractile needle from a tiny droplet—Assembly mechanism of the bacterial type VI secretion system

Tao Dong [20'+10']

Presenter affiliation: Southern University of Science and Technology, Shenzhen, China.

56

Human gut symbionts secrete a ubiquitin homologue for interbacterial competition

Xiang Gao [20'+10']

Presenter affiliation: Shandong University, Qingdao, China.

57

Hypervirulent *Klebsiella pneumoniae* employs genomic island encoded toxins against bacterial competitors in the gut

Yi Han Tan, Patricio Arros, Camilo B Erríos-Pastén, Indrik Wijaya, Wilson Chu, Yahua Chen, Guoxiang Cheam, Ahmad Nazri Mohamed Naim, Andrés Marcoleta, Aarthi Ravikrishnan, Niranjana Nagarajan, Rosalba Lagos, Yunn-Hwen Gan [10'+5']

Presenter affiliation: Yong Loo Lin School of Medicine, National University of Singapore, Singapore.

58

Enantiocomplementary gut bacterial enzymes metabolize dietary polyphenols

Xueyang Dong, Minwoo Bae, Emily P. Balskus [10'+5']

Presenter affiliation: Harvard University, Cambridge, Massachusetts.

59

Mechanism insights into a *Vibrio*-specific antibacterial weapon and its arsenal

Ming Liu, Zhao Wang, Kuo Zhang, Hao Wang, Yang Fu [10'+5']

Presenter affiliation: Southern University of Science and Technology, Shenzhen, China.

60

Designing microbiome based medicines for inflammatory bowel disease

Gemma L. D'Adamo, Michelle Chonwerawong, Patricia W. Khoo, Linden J. Gearing, Vanessa R. Marcelino, Jodee A. Gould, Emily L. Rutten, Sean M. Solari, Tamblyn Thomason, Emily L. Gulliver, Edward M. Giles, Samuel C. Forster [20'+10']

Presenter affiliation: Hudson Institute of Medical Research, Melbourne, Australia; Monash University, Melbourne, Australia.

61

WEDNESDAY, May 22—9:00 AM

SESSION 4 THE HOST ENVIRONMENT AND BACTERIAL INFECTION

Chairpersons: **Jingren Zhang**, Tsinghua University, Beijing, China
Matthias Machner, National Institutes of Health, Bethesda, Maryland, USA

***Legionella pneumophila*—A master manipulator of small GTPases**

Stephanie S. Lehman, Chad D. Williamson, Sabrina Bouchard, Nicole A. Ellis, Aleksandra Nita-Lazar, Trisha Tucholski, Michal Jarnik, Morgan Allen, Matthias P. Machner [20'+10']

Presenter affiliation: National Institutes of Health, Bethesda, Maryland.

62

lluminating *Mycobacterium tuberculosis* environmental cue integration and its coordination with bacterial metabolism during infection

Yue Chen, Nathan J. MacGilvary, Shumin Tan [20'+10']

Presenter affiliation: Tufts University School of Medicine, Boston, Massachusetts.

63

SLC7A11-mediated angiogenesis in mycobacterial granulomas promotes infection

Jing Zhou, Shu Song, Wenjuan Guo, Yuexiang Yang, Geyang Luo, Xiaoyu Yin, Jianxin Liu, Zilu Wen, Hao Wang, Yigong Zhou, Jiayin Shen, Qing Miao, Yanzheng Song, Bijie Hu, Qlan Gao, Stefan H. Oehlers, Decheng Wang, Bo Yan [10'+5']

Presenter affiliation: Fudan University, Shanghai, China.

64

Break

Exploring the role of RND-mediated efflux in the evolution of multidrug resistant *Vibrio cholerae*

Yuding Weng, Renee Bina, James E. Bina [10'+5']

Presenter affiliation: University of Pittsburgh, Pittsburgh, Pennsylvania. 65

The function of highly-ordered structure of host cytoskeletal intermediate filaments in bacterial replication

Yaming Jiu [10'+5']

Presenter affiliation: Shanghai Institute of Immunity and Infection, Chinese Academy of Sciences, Shanghai, China. 66

In vivo RNA-RNA interactome profiling unveils key small RNA regulators of bacterial pathogenesis

Yanjie Chao [10'+5']

Presenter affiliation: Chinese Academy of Sciences, Shanghai, China. 67

Molecular battling between encapsulated bacteria and liver macrophages

Jing-Ren Zhang [20'+10']

Presenter affiliation: Tsinghua University School of Medicine, Beijing, China. 68

WEDNESDAY, May 22—2:00 PM

Visit to Old Suzhou

WEDNESDAY, May 22—7:00 PM

SESSION 5 NEW DEVELOPMENTS IN PATHOGEN BIOLOGY AND CONTROL

Chairpersons: **Jörg Vogel**, University of Würzburg, Würzburg, Germany
Sophie Helaine, Harvard Medical School, Boston, Massachusetts, USA

Inner conflicts in bacterial persisters during infection

Sophie Helaine [20'+10']

Presenter affiliation: Harvard Medical School, Boston, Massachusetts. 69

<p>Resensitizing multi-drug resistant <i>Acinetobacter baumannii</i> to colistin <u>Mario Feldman</u> [20'+10'] Presenter affiliation: Washington University School of Medicine in St Louis, St Louis, Missouri.</p>	70
<p>Whole genome sequencing and zebrafish infection reveals signatures of epidemiological success in <i>Shigella sonnei</i> <u>Sydney Miles</u>, Claire Jenkins, Dilys Santillo, Vanessa Sancho-Shimizu, Kathryn Holt, Serge Mostowy [10'+5'] Presenter affiliation: London School of Hygiene and Tropical Medicine, London, United Kingdom.</p>	71
<p>Application of combined CRISPR screening for genetic and chemical-genetic interaction profiling in <i>Mycobacterium tuberculosis</i> <u>Mei-Yi Yan</u>, Dandan Zheng, Si-Shang Li, Yun-Mo Qu, Yi-Cheng Sun [10'+5'] Presenter affiliation: Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing, China.</p>	72
<p>Development of gut microbiota modulators as <i>Clostridioides difficile</i> infection therapy <u>Shaohua Wang</u>, Bijay Gurung, Maria Coureges De Benencia [10'+5'] Presenter affiliation: Ohio University Heritage College of Osteopathic Medicine, Athens, Ohio; Ohio University, Athens, Ohio.</p>	73
<p>The promise and challenge of programmable RNA antibiotics <u>Jörg Vogel</u> [20'+10'] Presenter affiliation: University of Würzburg, Würzburg, Germany.</p>	74

SESSION 6 CELL DEATH AND CHRONIC BACTERIAL INFECTIONS

Chairpersons: **Nina Salama**, Fred Hutchinson Cancer Center, Seattle, Washington, USA
Min Dong, Harvard Medical School, Boston, Massachusetts, USA

***C. difficile* intoxicates neurons and pericytes to drive neurogenic inflammation**

John Manion, Melissa A Musser, Gavin A Kuziel, Min Liu, Amy Shepherd, Siyu Wang, Pyung-Gang Lee, Leo Zhao, Jie Zhang, Ravi K.R. Marreddy, Jeffrey D Goldsmith, Ke Yuan, Julian G Hurdle, Ralf Gerhard, Rongsheng Jin, Seth Rakoff-Nahoum, Meenakshi Rao, Min Dong [20'+10']

Presenter affiliation: Boston Children's Hospital; Boston, Massachusetts; Harvard Medical School, Boston, Massachusetts. 75

Cancer-associated SNPs in bacteria—Lessons from *Helicobacter pylori*

Steffen Backert [20'+10']

Presenter affiliation: Friedrich Alexander University Erlangen-Nürnberg, Erlangen, Germany. 76

A small RNA regulates bacterial lifestyle during human chronic infection

Pengbo Cao [10'+5']

Presenter affiliation: Westlake University, Hangzhou, China. 77

***P. gingivalis* infection upregulates PD-L1 expression on dendritic cells, suppresses CD8⁺ T cell responses and aggravates oral cancer**

Junling Ren, Xiao Han, Hannah Lohner, Rosalie G. Hoyle, Shuang Liang, Huizhi Wang [10'+5']

Presenter affiliation: VCU Philips Institute for Oral Health Research, Virginia Commonwealth University, Richmond, Virginia. 78

Break

An organoid-based model of the prostate reveals UPEC tropism to luminal cells

Maria Guedes, Amruta Joshi, Sina Dorn, Simon Peters, Carmen Aguilar [10'+5']

Presenter affiliation: University of Würzburg, Würzburg, Germany. 79

Identification of a hemorrhagic determinant in *C. difficile* TcdA and *P. sordellii* TcsH

Yangling Zheng, Qi Yang, Liang Tao [10'+5']

Presenter affiliation: Westlake University, Hangzhou, China.

80

Pathogen hijacks programmed cell death signaling by arginine ADPR-deacylation of caspases

Shan Li [20'+10']

Presenter affiliation: Huazhong Agricultural University, Wuhan, China; Hubei University of Medicine, Shiyan, China.

81

***Helicobacter pylori* carcinogenesis—Host and bug changes during stomach cancer development**

Nina R. Salama [20'+10']

Presenter affiliation: Fred Hutchinson Cancer Center, Seattle, Washington.

82

THURSDAY, May 23—2:00 PM

SESSION 7 INNATE IMMUNE RESPONSE TO INFECTION

Chairpersons: **Pavel Kovarik**, University of Vienna, Austria
Teresa Thurston, Imperial College London, United Kingdom

Innate immune sensing of RhoGTPase-activating bacterial toxins

Laurent Boyer [20'+10']

Presenter affiliation: Université Côte d'Azur, INSERM U1065, Nice, France.

83

Bacterial effectors and their many ways to modulate immune signaling

Teresa Thurston [20'+10']

Presenter affiliation: Imperial College London, London, United Kingdom.

84

Non-canonical autophagy and endomembrane repair—Learn from bacterial infection

Yue Xu [10'+5']

Presenter affiliation: Shanghai Jiao Tong University School of Medicine, Shanghai, China.

85

Mechanistic insights into the subversion of host LUBAC and RNF213 by the *Shigella* E3 ligase IpaH1.4

Lifeng Pan [10'+5']

Presenter affiliation: Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai, China.

86

Break

Analysing mechanisms by which *Burkholderia* suppresses NF- κ B signalling

Yizhou Huang, Magdalena Szczesna, Francesca Bonini, Teresa Thurston [10'+5']

Presenter affiliation: Imperial College London, London, United Kingdom.

87

Pre-mRNA fate decision safeguards the fidelity of the host immune response

Annika Bestehorn, Jeanne Fesselet, Martina Borroni, Christina Zeiler, Sebastian Didusch, Pavel Kovarik [20'+10']

Presenter affiliation: Max Perutz Labs, University of Vienna, Vienna, Austria.

88

Barrier-cell inflammasome activation and pyroptosis in antibacterial defense and sepsis

Feng Shao [20'+10']

Presenter affiliation: National Institute of Biological Sciences, Beijing, Beijing, China.

89

THURSDAY, May 23—6:00 PM

COCKTAILS and BANQUET

SESSION 8 CELL BIOLOGY OF BACTERIAL INFECTION

Chairpersons: **Elizabeth Hartland**, Hudson Institute of Medical Research, Melbourne, Australia
Tomoko Kubori, Gifu University, Gifu, Japan

Turning pathogens into cell-biology tools

Shaeri Mukherjee [20'+10']

Presenter affiliation: University of California, San Francisco, San Francisco, California.

90

Multi-tired regulation of host membrane traffic by *Legionella pneumophila*

Tomoko Kubori [20'+10']

Presenter affiliation: Gifu University, Gifu, Japan.

91

Yersinia effector YopJ Induces host protein desuccinylation and dampens immune response by deubiquitinating SIRT5

Yan Zhang, Yu Zhang, Wenjing Feng, Zongmin Du [10'+5']

Presenter affiliation: Beijing Institute of Microbiology and Epidemiology, Beijing, China.

92

Break

***Mycobacterium tuberculosis* suppresses host DNA repair to boost its intracellular survival**

Shanshan Liu, Liru Guan, Cheng Peng, Yuanna Cheng, Hongyu Cheng, Fei Wang, Mingtong Ma, Ruijuan Zheng, Zhe Ji, Pengfei Cui, Yefei Ren Cui, Liru Li, Chenyue Shi, Jie Wang, Xiaochen Huang, Hua Yang, Lin Wang, Baoxue Ge [10'+5']

Presenter affiliation: Shanghai Key Laboratory of Tuberculosis, Shanghai Pulmonary Hospital, Key Laboratory of Pathogen-Host Interaction, Mini, Shanghai, China; Tongji University School of Medicine, Shanghai, China.

93

The *Shigella* kinase effector OspG modulates host ubiquitin signaling to escape septin-cage entrapment

Wei Xian, Jiaqi Fu, Qinxin Zhang, Chuang Li, Yan-Bo Zhao, Zhiheng Tang, Yi Yuan, Ying Wang, Yan Zhou, Peter S. Brzoic, Ning Zheng, Songying Ouyang, Zhao-qing Luo, Xiaoyun Liu [10'+5']

Presenter affiliation: Peking University, Beijing, China.

94

Modulation of the host epitranscriptome during *Legionella* infection

Elizabeth Hartland [20'+10']

Presenter affiliation: Hudson Institute of Medical Research, Melbourne, Australia.

95

CLOSING REMARKS

Elizabeth Hartland

Hudson Institute for Medical Research