

## PROGRAM

MONDAY, April 8—7:00 PM

### Welcome and Introduction

**Maoyen Chi and Jörg Vogel**

#### SESSION 1      OPENING SESSION

**Chairperson:**      **Jörg Vogel**, Helmholtz Institute for RNA-based Infection Research, Würzburg, Germany

#### KEYNOTE SPEAKER

**Enterococci—Ultimate model of microbial interaction with terrestrial hosts, and how the properties they evolved led to trouble in the antibiotic era**

Michael S. Gilmore, Francois Lebreton, Ashlee M. Earl [35'+10']  
Presenter affiliation: Harvard Medical School, Boston, Massachusetts; Harvard, Boston, Massachusetts; Broad Institute, Cambridge, Massachusetts. 1

**Emergence of a botulinum neurotoxin-like toxin in *Enterococcus faecium***

Sicai Zhang, Francois Lebreton, Michael J. Mansfield, Shin-Ichiro Miyashita, Jie Zhang, Julia A. Schwartzman, Liang Tao, Geoffrey Masuyer, Markel Martínez Carranza, Pål Stenmark, Michael S. Gilmore, Andrew C. Doxey, Min Dong [10'+5']  
Presenter affiliation: Boston Children's Hospital, Boston, Massachusetts; Harvard Medical School, Boston, Massachusetts. 2

**Pattern recognition receptors and the host response to *Salmonella* infection**

Clare E. Bryant [20'+10']  
Presenter affiliation: The University of Cambridge, Cambridge, United Kingdom. 3

**SESSION 2**      **CANCER-ASSOCIATED MICROBES**

**Chairperson:**      **Kenya Honda**, Keio University, Tokyo, Japan

**Mechanistic insight on *Fusobacterium nucleatum* in colorectal cancer—A "two-hit" model**

Yiping W. Han [20'+10']

Presenter affiliation: Columbia University, New York, New York. 4

**Tumor targeting by *Fusobacterium nucleatum***

Naseem Maalouf, Lishay Parhi, Jawad Abed, Amjad Shehadeh, Tamar Alon, Chamutal Gur, Ofer Mandelboim, Gilad Bachrach [20'+10']

Presenter affiliation: The Hebrew University-Hadassah School of Dental Medicine, Jerusalem, Jerusalem, Israel. 5

**Taking the RNA route to a better understanding of *Fusobacterium***

Jörg Vogel [20'+10']

Presenter affiliation: Helmholtz Institute for RNA-based Infection Research (HIRI), Würzburg, Germany; University of Würzburg, Würzburg, Germany. 6

**Reverse genetic engineering facilitates the identification of *Fusobacterium nucleatum* proteins critical for host cell binding, invasion and altered cell signaling**

Michael A. Casasanta, Christopher C. Yoo, Blake E. Sanders, Ariana Umana, Alison J. Duncan, Daniel J. Slade [20'+10']

Presenter affiliation: Virginia Polytechnic Institute and State University, Blacksburg, Virginia. 7

***F. nucleatum* affects chemoresistance via targeting selective microRNA and autophagy**

Jie Hong, TaChung Yu, Fangfang Guo, Haoyan Chen, Weiping Zou, Yingxuan Chen, Jing-yuan Fang [10'+5']

Presenter affiliation: RenJi Hospital, School of Medicine, Shanghai Jiao Tong University, Shang hai, China. 8

***Heliobacter pylori* colonization and infection**

Jianzhong Zhang [20'+10']

Presenter affiliation: China CDC, Beijing, China. 9

**Staying in shape—Bacterial cytoskeleton-cell wall interactions in the gastric pathogen *Helicobacter pylori***

Nina R. Salama, Jennifer A. Taylor, Holly M. Jacobs, Sophie R. Sichel, Kris M. Blair [20'+10']

Presenter affiliation: Fred Hutchinson Cancer Research Center, Seattle, Washington; University of Washington, Seattle, Washington. 10

TUESDAY, April 9—2:00 PM

**SESSION 3 POSTER SESSION**

**Recombinant BCG with bacterial signaling molecule c-di-AMP as endogenous adjuvant induces stronger immune responses after *Mycobacterium tuberculosis* infection**

Yinlan Bai, Huanhuan Ning, Zhikai Xu

Presenter affiliation: Air Force Medical University, Xi'an, China. 11

***Mycobacterium tuberculosis* surface protein UBP3 is a target of ubiquitin involved in host antimycobacterial xenophagy**

Qiyao Chai, Zhe Lu, Jing Wang, CuiHua Liu

Presenter affiliation: Institute of Microbiology, Beijing, China; Savaid Medical School, Beijing, China. 12

**A dual mechanism sRNA switches the flux of alanine into carbon and nitrogen metabolism in *Vibrio alginolyticus***

Chang Chen, Yiqing Deng, Mei Xie

Presenter affiliation: South China Sea Institution of Oceanology, CAS, Guangzhou, China. 13

**Fresh water source and *Acanthamoeba castellanii* as a potential reservoir for toxigenic *Clostridium difficile***

Ya-Lien Cheng, Bo-Yang Tsai, Pei-Jane Tsai, Bing-Mu Hsu, Wei-Chen Lin, I-Hsiu Huang

Presenter affiliation: National Cheng Kung University, Tainan City, Taiwan. 14

**Insights into *Clostridium difficile* spores and host interaction**

Po-Jung Chiu, I-Hsiu Huang

Presenter affiliation: National Cheng Kung University, Tainan City, Taiwan. 15

- Transcriptional regulation of *Vibrio vulnificus* *vvhBA* encoding a cytolysin/hemolysin**  
Garam Choi, Kyung Ku Jang, Sang Ho Choi  
 Presenter affiliation: National Research Laboratory of Molecular Microbiology and Toxicology, Seoul, South Korea. 16
- Helicobacter pylori* methylome and its role in pathogenesis**  
Rao N. Desirazu, Sumith Kumar, Ritesh Kumar, Arun Banerjee, Yedu Prasad  
 Presenter affiliation: Indian Institute of Science, Bangalore, India. 17
- Structural mechanism of blocking host xenophagy by a bacterial ADP-ribosyltransferase effector**  
Jingjin Ding, Yue Xu, Sen Cheng, Feng Shao  
 Presenter affiliation: National Institute of Biological Sciences, Beijing, China; Chinese Academy of Sciences, Institute of Biophysics, Beijing, China. 18
- Comparative analysis of pneumococcal protein and polysaccharide vaccine antigens against septic infection of *Streptococcus pneumoniae***  
Ming Ding, Yang Wang, Jing-Ren Zhang  
 Presenter affiliation: Tsinghua University, Beijing, China. 19
- The N-end rule E3 ligase UBR2 mediates NLRP1B inflammasome activation by anthrax lethal toxin**  
 Hao Xu, Jianjin Shi, Hang Gao, Ying Liu, Zhenxiao Yang, Feng Shao, Na Dong  
 Presenter affiliation: China Agricultural University, Beijing, China. 20
- NLRP3 inflammasome plays an important role in caspase-1 activation and IL-1 $\beta$  secretion in macrophages infected with *Pasteurella multocida***  
Rendong Fang, Huihui Du, Guihua Lei, Jiali Jiang, Tingting Chen, Yuanyi Peng  
 Presenter affiliation: College of Animal Science and Technology, Southwest University, Chongqing, China. 21
- Molecular mechanisms of inflammasome activation by the foodborne bacterium *Bacillus cereus***  
Shouya Feng, Anukriti Mathur, Jenni A. Hayward, Chinh Ngo, Daniel Fox, Si Ming Man  
 Presenter affiliation: The John Curtin School of Medical Research, The Australian National University, Canberra, Australia. 22

- Human-derived bacterial species that can exclude TH1 cell-inducing *Klebsiella pneumoniae* from the intestine**  
Munehiro Furuichi, Takaaki Kawaguchi, Keiko Yasuma, Seiko Narushima, Koji Atarashi, Kenya Honda  
 Presenter affiliation: Keio University, Tokyo, Japan. 23
- Characterisation of the Arg-GlcNAc glycosyltransferase effectors from *Salmonella enterica***  
Jiyao Gan, Nichollas Scott, Joshua Newson, Tanian Wong Fok Lung, Jaclyn Pearson, Cristina Giogha, Elizabeth Hartland  
 Presenter affiliation: Hudson Institute of Medical Research, Melbourne, Australia; The University of Melbourne at the Peter Doherty Institute for Infection and Immunity, Melbourne, Australia. 24
- The protease ClpP controls the biphasic life cycle of *Legionella pneumophila* by dually regulating CsrA**  
Zhenhuang Ge, Qinsha Long, Xin Pan, Dong Shen, Yongjun Lu  
 Presenter affiliation: School of Life Sciences, Guangzhou, China; Biomedical Center, Guangzhou, China. 25
- Fusobacterium nucleatum* may promote glycolysis via modulating lncRNA in colorectal cancer cells**  
Fangfang Guo, Dan Ma, Chaoqin Shen, Haoyan Chen, Jie Hong, Jing-Yuan Fang  
 Presenter affiliation: Renji Hospital affiliation to Shanghai Jiaotong University, Shanghai, China. 26
- Response regulator interplays with its cognate histidine kinase for a prompt response in transcriptional surge**  
Aidong Han, Mingyan Su, Mingquan Xie, Jiayan Sang  
 Presenter affiliation: Xiamen University, Xiamen, China. 27
- Epithelial cells defend against intracellular Gram-negative bacteria via non-canonical inflammasome mediated pyroptosis**  
Huabin He, Wang Liu, Da Li, Feng Shao  
 Presenter affiliation: National Institute of Biological Sciences, Beijing, Beijing, China. 28
- Evaluation of the efficacy and immunogenicity of a novel live attenuated *Salmonella* Typhimurium delivering porcine epidemic diarrhea virus (pedv) spike protein**  
Chamith Y. Hewawaduge, John Hwa Lee  
 Presenter affiliation: Chonbuk National University, Iksan, South Korea. 29

- A census of RNA and protein complexes in a model Gram-positive bacterium reveals exonuclease-mediated stabilization of small RNAs in the competence regulon**  
Jens Hör, Silvia Di Giorgio, Geneviève Garriss, Lisa-Marie Hack, Konrad U. Förstner, Birgitta Henriques-Normark, Jörg Vogel  
 Presenter affiliation: University of Würzburg, Würzburg, Germany. 30
- Identification and characterization of *Fusobacterium nucleatum* proteins associated with promoting oral squamous cell carcinoma**  
Wan-Hsin Hsueh, Jenn-Ren Hsiao, Cheng-Gang Wu, Hung-Ton That, I-Hsiu Huang  
 Presenter affiliation: National Cheng Kung University, College of Medicine, Tainan city, Taiwan. 31
- A microbiota-derived bacteriocin targets the host to confer diarrhea resistance in early-weaned piglets**  
Jun Hu, Libao Ma, Yangfan Nie, Wenyong Zheng, Xinkai Wang, Chunlin Xie, Zilong Zheng, Zhichang Wang, Tao Yang, Min Shi, Lingli Chen, Qiliang Hou, Yaorong Niu, Xiaofan Xu, Yuhua Zhu, Wei Hong, Xianghua Yan  
 Presenter affiliation: Huazhong Agricultural University, Wuhan, China. 32
- The primary transcriptome of *Salmonella enteritidis* P125109, a pathogen responsible for food-borne disease worldwide**  
Wenqing Hu, Blanca Perez-Sepulveda, Jay Hinton  
 Presenter affiliation: University of Liverpool Institute of Integrative Biology, Liverpool, United Kingdom. 33
- Characterization of a Lrp/AsnC family regulator in *Clostridium difficile***  
I-Hsiu Huang, Kuan-Yu Chen, Jenn-Wei Chen  
 Presenter affiliation: College of Medicine, National Cheng Kung University, Tainan, Taiwan. 34
- DprA is essential for natural competence in *Riemerella anatipestifer* and has a conserved evolutionary mechanism**  
Li Huang, Xiu Tian, Mafeng Liu, Mingshu Wang, Francis Biville, Anchun Cheng  
 Presenter affiliation: Sichuan Agricultural University, Chengdu, China; College of Veterinary Medicine of Sichuan Agricultural University, Chengdu, China. 35

- New perspectives on *Galleria mellonella* larvae as a host model using *Riemerella anatipestifer* as a proof of concept**  
Mafeng Liu, Mi Huang, Xiu Tian, Francis Biville, Mingshu Wang, Anchun Cheng  
Presenter affiliation: College of Veterinary Medicine of Sichuan Agricultural University, Chengdu, China; Sichuan Agricultural University, Chengdu, China. 36
- DNA Inversions in the DNA Methyltransferase *hdsS* genes of phylogenetically divergent bacteria**  
Xueting Huang, Chunhao Li, Jing-Ren Zhang  
Presenter affiliation: Tsinghua University, Beijing, China. 37
- How guanylate-binding proteins are targeted by an *Shigella E3* ligase and implications for their structural dynamics**  
Chengcong Ji, Shuo Du, Peng Li, Qinyu Zhu, Xiaoke Yang, Chunhong Long, Jin Yu, Feng Shao, Junyu Xiao  
Presenter affiliation: Peking University, Beijing, China. 38
- Construction of a novel tetravalent dengue vaccine with *Salmonella Typhimurium* bacterial ghost and evaluation of its immunogenicity protection efficacy using a mouse model**  
Eunha Kim, JohnHwa Lee  
Presenter affiliation: Chonbuk National University, Iksan, South Korea. 39
- The E3 ubiquitin ligase ubiquitylates and stabilizes GSDMD to promote pyroptotic cell death**  
Wenqing Gao, Xuehe Liu, Yuanyuan Li, Jixi Li  
Presenter affiliation: State Key Laboratory of Genetic Engineering, School of Life Sciences, Shanghai, China. 40
- Pathogen blocks host intracellular LPS receptor caspase-4/11 mediated immune defense by a novel post-translational modification**  
Zilin Li, Wang Liu, Feng Shao  
Presenter affiliation: National Institute of Biological Sciences, Beijing, China. 41
- Age-dependent adaptive immune cells in the bladder drive increased risk of uropathogenic *E. coli* infections**  
Marianne M. Ligon, Caihong Wang, Bisiayo E. Fashemi, Jerry L. Lowder, Indira U. Mysorekar  
Presenter affiliation: Washington University, St. Louis, Missouri. 42

- Development of a polyvalent mucosal vaccine against *Clostridium difficile* infection**  
Kuan-Yu Lin, Yu-Shan Lin, Yu-Fon Chen, Pei-Jane Tsai, Jeng-Shiung Jan, I-Hsiu Huang  
 Presenter affiliation: National Cheng Kung University, Tainan City, Taiwan. 43
- Chemoproteomic profiling reveals the mechanism of bile resistance in bacteria**  
Biwei Liu, Shentian Zhuang, Runze Tian, Xiaoguang Lei, Chu Wang  
 Presenter affiliation: PKU-Tsinghua Center for Life Sciences, Beijing, China. 44
- Salmonella* proteomic profiling during infection distinguishes the intracellular environment of host cells**  
 Zezhou Li, Yanhua Liu, Jiaqi Fu, Buyu Zhang, Sen Cheng, Mei Wu, Zhen Wang, Jiezhong Jiang, Cheng Chang, Xiaoyun Liu  
 Presenter affiliation: Peking University, Beijing, China. 45
- High-fat-diet-induced gut microbiota alteration modulates progression of breast cancer**  
Xiyuan Liu, Jiewen Chen, Junli Gong, Hai Hu, Erwei Song, Yongjun Lu  
 Presenter affiliation: Sun Yat-Sen University, Guangzhou, China. 46
- Characterization of *Vibrio vulnificus* HmpA and its essential role in survival against nitrosative stress**  
Eun Jung Na, Dukyun Kim, Sang Ho Choi  
 Presenter affiliation: National Research Laboratory of Molecular Microbiology and Toxicology, Seoul, South Korea. 47
- c-di-AMP enhances cellular immune response of BCG in IL-17<sup>-/-</sup> mice**  
Huanhuan Ning, Jian Kang, Lixin Shen, Yinlan Bai  
 Presenter affiliation: Air Force Medical University, Xi'an, China; Northwest University, Xi'an, China. 48
- Developing a model to understand *Helicobacter pylori*-dependent tissue changes during cancer progression**  
Valerie P. O'Brien, Christina K. Leverich, Jean S. Campbell, Robert H. Pierce, Eunyoung Choi, James R. Goldenring, Nina R. Salama  
 Presenter affiliation: Fred Hutchinson Cancer Research Center, Seattle, Washington. 49



- Microbiota suppresses the accumulation of intraepithelial ILC1 in the intestine**  
Yuki Okamura, Yuko Sato, Koji Atarashi, Kenya Honda  
 Presenter affiliation: Keio University School of Medicine, Tokyo, Japan. 50
- Gut microbiota changes associated with *Candida* infection in C57BL/6 mice**  
Chien-Hsiung Pan  
 Presenter affiliation: NHRI, Zhunan Town, Miaoli County, Taiwan. 51
- Development of recombinant vector vaccine for severe fever with thrombocytopenia syndrome virus using an attenuated *Salmonella* delivery system**  
Ji-young Park, John Hwa Lee  
 Presenter affiliation: College of Veterinary Medicine, Iksan, South Korea. 52
- An attenuated *Salmonella* Typhimurium delivering *Lawsonia* specific antigen induces humoral and mucosal immune responses against *Lawsonia intracellularis***  
Sungwoo Park, Johnhwa Lee  
 Presenter affiliation: Chonbuk National University, Iksan, South Korea. 53
- A global RNA map of the emerging cancer-associated bacterium *Fusobacterium nucleatum***  
Falk Ponath, Caroline Tawk, Franziska Faber, Jörg Vogel  
 Presenter affiliation: Helmholtz Institute for RNA-based Infection Research (HIRI), Würzburg, Germany. 54
- Robust endo-lysosomal rewiring in *M. tuberculosis*-infected macrophages defines the infected cell population**  
Kuldeep Sachdeva, Manisha Goel, Malvika Sudhakar, Karthik Raman, Mansi Mehta, Amit Singh, Varadharajan Sundaramurthy  
 Presenter affiliation: National Centre for Biological Sciences, Bangalore, India. 55
- Salmonella gallinarum* delivering M2eCD40L in protein and DNA formats acts as a bivalent vaccine against fowl typhoid and H9N2 infection in chickens**  
Amal Senevirathne, Chamith Hewawaduge, Sung woo Park, John Hwa Lee  
 Presenter affiliation: Chonbuk National University, Iksan, South Korea. 56

- Immune therapy delivered by attenuated rough *Salmonella* Typhimurium ( $\Delta$ lon $\Delta$ cpxR $\Delta$ rfaL $\Delta$ asd) expressing and secreting human SLURP-1, an anti-proliferative protein, synergistically inhibited CT26 tumor progression in BALB/c mice**  
Amal N. Senevirathne, John H. Lee  
 Presenter affiliation: Chonbuk National University, Iksan, South Korea. 57
- GSDMD-mediated pyroptosis controls anti-bacterial defense and lethal effects of inflammasome activation**  
Xuyan Shi, Yue Zhao, Jianjin Shi, Fengchao Wang, Feng Shao  
 Presenter affiliation: The National Institute of Biological Sciences, Beijing, China. 58
- Side effects of transformation help understand important pathophysiology or pathogenesis of obligate intracellular bacteria**  
Lihua Song  
 Presenter affiliation: Beijing University of Chemical Technology, Beijing, China. 59
- Novel chimeric protein vaccines against *Clostridium difficile* infection**  
 Shaohui Wang, Yuanguo Wang, Ying Cai, Ciaran P. Kelly, Xingmin Sun  
 Presenter affiliation: University of South Florida, Tampa, Florida. 60
- TPL2 is a key regulator of intestinal inflammation in *C. difficile* infection**  
 Yuanguo Wang, Shaohui Wang, Ciaran P. Kelly, Hanping Feng, Andrew Greenberg, Xingmin Sun  
 Presenter affiliation: University of South Florida, Tampa, Florida. 61
- Development of a markerless gene deletion strategy and use it to characterize B739\_1068 as a TonB dependent heme transporter in *Riemerella anatipestifer* CH-1**  
 Mafeng Liu, Xiu Tian, Anchun Cheng  
 Presenter affiliation: College of Veterinary Medicine of Sichuan Agricultural University, Chengdu, China. 62
- A LysR-type transcriptional regulator impacts multiple phenotypes in *Acinetobacter baumannii***  
Aimee R. Paulk Tierney, Philip N. Rather  
 Presenter affiliation: Emory University, Atlanta, Georgia. 63

<b>Deposition of host proteins on medical devices provide a bed for staphylococcal biofilms</b> <u>Jennifer N. Walker, Ana L. Flores-Mireles, Chloe L. Pinkner, Michael G. Caparon, Scott J. Hultgren</u> Presenter affiliation: Washington University School of Medicine, St. Louis, Missouri.	64
<b>Characterization of the microbiota among infants who were <i>in utero</i> exposed to Hurricane Maria in Puerto Rico</b> <u>Nicolas Rosario Matos, David de Ángel Solá, Midnela Acevedo Flores, Leyao Wang</u> Presenter affiliation: Washington University, St. Louis, Missouri.	65
<b>Prophage-encoded toxin/antitoxin system controls lytic conversion of prophage in <i>Pseudomonas aeruginosa</i></b> <u>Xiaoxue Wang, Yangmei Li</u> Presenter affiliation: Chinese Academy of Sciences, Guangzhou, China.	66
<b>Regulation of the small GTPase Rab1 function by a bacterial glucosyltransferase</b> <u>Zhen Wang, Alix McCloskey, Sen Cheng, Mei Wu, Chenyu Xue, Zhengyou Yu, Jiaqi Fu, Yanhua Liu, Zhao-Qing Luo, Xiaoyun Liu</u> Presenter affiliation: Peking University, Beijing, China.	67
<b>Single-cell analysis of toxin-antitoxin system</b> <u>Lina Wu, Miaomiao Zhang, Yiyi Song, Xinyi Hong, Yuting Zhang, Xiaomei Yan</u> Presenter affiliation: Xiamen University, Xiamen, China.	68
<b>Motility is required for <i>Salmonella</i> to colonize and kill tumor cells in a 3D tumor aggregate model</b> <u>Lisheng Xu, Giulia Adriani, Roger D. Kamm, Linda J. Kenney</u> Presenter affiliation: Mechanobiology Institute, Singapore.	69
<b>A <i>Salmonella</i> effector reveals the V-ATPase-ATG16L1 axis that initiates bacterial autophagy</b> <u>Yue Xu, Ping Zhou, Sen Cheng, Jingjin Ding, Feng Shao</u> Presenter affiliation: National Institute of Biological sciences, Beijing, China.	70

- Uncoupled hyper-activation of Pqs quorum sensing system modulates the interplay of virulence and resistance in a multidrug-resistant clinical *Pseudomonas aeruginosa* isolate**  
 Huiluo Cao, Tingying Xia, Yanran Li, Zeling Xu, Salim Bougouffa, Yat Kei Lo, Vladimir B. Bajic, Haiwei Luo, Patrick C.Y. Woo, Aixin Yan  
 Presenter affiliation: The University of Hong Kong, Hong Kong SAR, China. 71
- A long-term within-patient colonization fitness of carbapenemase-resistant *Klebsiella pneumoniae* strains**  
Zhiqiang Yang, Rong Zhang, Qiaoling Sun, Shang Chen, Shaolin Wang, Zhangqi Shen, Shuangyang Ding, Kui Zhu  
 Presenter affiliation: China Agricultural University, Beijing, China. 72
- Regulation mechanism of response regulator EsrB in *Edwardsiella piscicida***  
Kaiyu Yin, Qiyao Wang  
 Presenter affiliation: East China University of Science and Technology, Shanghai, China. 73
- A mucosal infection rewires TNF-alpha signaling dynamics to skew susceptibility to recurrence**  
Lu Yu, Valerie P. O'Brien, Denise Dorsey, Elisha D. Roberson, Jonathan Livny, Nirmalya Bandyopadhyay, Marco Colonna, Michael G. Caparon, Scott J. Hultgren, Thomas J. Hannan  
 Presenter affiliation: Washington University School of Medicine, St. Louis, Missouri. 74
- Allelic variations in *Salmonella* colonization factors contribute to host-specific binding and enrichment of antimicrobial resistance genes**  
 Hang Pan, Xiao Zhou, Xianqi Peng, Shelley Rankin, Min Yue  
 Presenter affiliation: Zhejiang University College of Animal Sciences, Hangzhou, China. 75
- Identification of capsule-independent virulence factors in *Streptococcus pneumoniae***  
Yuna Zeng, Fangfang Jiao, Haoran An, Jing-Ren Zhang  
 Presenter affiliation: Tsinghua University, Beijing, China. 76
- The AI-2/luxS quorum sensing system affects the growth characteristics, biofilm formation and virulence of *Haemophilus parasuis***  
Bingzhou Zhang, Changshen Jiang, Yaofang Hu, Qigai He  
 Presenter affiliation: College of Veterinary Medicine, Wuhan, China. 77

- The ubiquitin ligase Trim27 suppresses the intracellular survival of *Mycobacterium tuberculosis* in mice**  
 Jing Wang, Dongdong Zhao, Zehui Lei, Cui Hua Liu  
 Presenter affiliation: Institute of Microbiology, Beijing, China; Savaid Medical School, Beijing, China. 78
- De Novo synthesis, structural assignment and biological evaluation of pseudopaline, a metallophore by *Pseudomonas aeruginosa***  
Tianhu Zhao, Jian Zhang, Rongwen Yang, Xiaoguang Lei  
 Presenter affiliation: Peking University, Beijing, China. 79
- The LPS outer core of *Pasteurella multocida* has a significant role in bacterial resistance to environmental stresses and virulence in ducks**  
Xinxin Zhao, Sheng Liang, Dekang Zhu, Mafeng Liu, Mingshu Wang, Renyong Jia, Shun Chen, Qiao Yang, Ying Wu, Anchun Cheng  
 Presenter affiliation: Sichuan Agricultural University, Chengdu, China. 80
- Alarmone Ap4A is elevated by aminoglycoside antibiotics and enhances their bactericidal activity**  
 Xia Ji, Jun Zheng  
 Presenter affiliation: University of Macau, Macau. 81
- Genome-wide CRISPR/Cas9 library screening identifies host factors required for influenza virus infection**  
Ao Zhou, Hannes Ponstingl, Allan Bradley  
 Presenter affiliation: Southwest Medical University, Luzhou, China; Wellcome Trust Sanger Institute, Cambridge, United Kingdom; University of Cambridge, Cambridge, United Kingdom. 82
- Alpha-kinase 1 is a cytosolic innate immune receptor for bacterial ADP-Heptose**  
Ping Zhou, Yang She, Na Dong, Peng Li, Huabin He, Alessio Borio, Qingcui Wu, Shan Lu, Xiaojun Ding, Yong Cao, Yue Xu, Wenqing Gao, Mengqiu Dong, Jingjin Ding, Da-Cheng Wang, Alla Zamyatina, Feng Shao  
 Presenter affiliation: National Institute of Biological Sciences, Beijing, China. 83
- A novel quorum-sensing controlled type I effector of *Pseudomonas aeruginosa*, TesG, suppresses host immune response during chronic infection**  
 Kelei Zhao, Jing Li, Xiuyue Zhang, Xikun Zhou  
 Presenter affiliation: Sichuan University, Chengdu, China. 84

**Genetic dissection of the regulation of succinate utilization by *Salmonella Typhimurium***

Xiaojun Zhu, Nicolas Wenner, Jay Hinton

Presenter affiliation: Institute of Integrative Biology, Liverpool, United Kingdom.

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TUESDAY, April 9—4:30 PM

**Chinese Tea and Beer Tasting**

TUESDAY, April 9—7:00 PM

**SESSION 4** GASTROINTESTINAL COLONIZATION AND THE MICROBIOME

**Chairperson:** **Neal Alto**, University of Texas Southwestern Medical Center, Dallas, Texas, USA

**Gut microbiota-targeted therapeutic strategy**

Kenya Honda [20'+10']

Presenter affiliation: Keio University School of Medicine, Tokyo, Japan; RIKEN, Yokohama, Japan.

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***Clostridium difficile* infection induces colonic stem cell damage and impairs intestinal repair**

Dena Lyras [20'+10']

Presenter affiliation: Biomedicine Discovery Institute, Infection and Immunity Program, Monash University, Melbourne, Australia.

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**Modeling succession of the human infant gut microbiota in gnotobiotic animals**

Lihui Feng, Jiye Cheng, Dmitry A. Rodionov, Andrei L. Osterman, Jeffrey I. Gordon [10'+5']

Presenter affiliation: Washington University School of Medicine, St. Louis, Missouri; Current address: Fudan University, Shanghai, China.

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**A novel bacteriophage lysin-human defensin fusion protein is effective in treatment of *Clostridioides difficile* infection in mice**

Zhong Peng, Shaohui Wang, Mussie Gide, Duolong Zhu, Chunhui Li, Jianfeng Cai, Xingmin Sun [10'+5']

Presenter affiliation: University of South Florida, Tampa, Florida.

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**Assessing the viability of transplanted gut microbiota by sequential D-amino acid-based metabolic probe labeling (STAMP)**

Wei Wang [10'+5']

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

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**Microbiome-targeted natural maternal antibodies protect neonates from enteric infection**

Wen Zheng, Wenjing Zhao, John J. Mekalanos, Dennis L. Kasper [10'+5']

Presenter affiliation: Sun Yat-Sen University, Guangzhou, China.

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WEDNESDAY, April 10—9:00 AM

**SESSION 5** HOST-PATHOGEN INTERFACE AND NEW TECHNOLOGIES

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

**Pneumococcal interactions with the host**

Birgitta Henriques-Normark [20'+10']

Presenter affiliation: Karolinska Institutet, Stockholm, Sweden.

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**Probing the *Salmonella*-host interface with high-throughput approaches**

Athanasios Typas [20'+10']

Presenter affiliation: EMBL, Heidelberg, Germany.

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**A new role for host annexin A2 in establishing bacterial adhesion to vascular endothelial cell—Lines of evidence from in vivo study and micro force spectroscopy**

Xi He, Qing Chang, Weiwei Zhang, Dejun Gong, Yixuan Zhou, Angelo Gaitas, Fanglin Lu, Bin Gong [10'+5']

Presenter affiliation: University of Texas Medical Branch, Galveston, Galveson, Texas.

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**Peptide-guided drug delivery to achieve tissue-specific modulation of macrophage function and infection**

Hongbo Pang [10'+5']

Presenter affiliation: University of Minnesota, Minneapolis, Minnesota; Sanford Burnham Prebys Medical Discovery Institute, La Jolla, California.

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WEDNESDAY, April 10—11:00 AM

**SESSION 6**      HOST RESPONSE TO BACTERIAL INFECTION I

**Chairperson:**    **Zhao-Qing Luo**, Purdue University, West Lafayette,  
Indiana, USA

**Transcriptomics demonstrate type I interferons contribute to pathogenesis in tuberculosis and block protective responses to *Mycobacterium tuberculosis* and other bacteria**

Anne O'Garra [20'+10']

Presenter affiliation: The Francis Crick Institute, London, United Kingdom; Imperial College, London, United Kingdom.

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**Pathogen-induced signaling to the autophagy enzymes—Implications for Crohn's disease**

Ryan Russell [10'+5']

Presenter affiliation: University of Ottawa, Ottawa, Canada.

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**Quality control of membrane-bound heteromeric respiratory complexes by rhomboid proteolysis**

Guangyu Liu, Steven E. Beaton, Adam G. Grieve, Rhiannon M. Evans, Miranda Rogers, Fraser A. Armstrong, Matthew Freeman, Rachel M. Exley, Christoph M. Tang [10'+5']

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

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**Molecular crosstalk between redox stress and autophagy regulates urothelial defense responses to uropathogenic *Escherichia coli* infection**

Indira U. Mysorekar [20'+10']

Presenter affiliation: Washington University School of Medicine, St. Louis, Missouri.

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WEDNESDAY, April 10—1:30 PM

**Visit to Old Suzhou**



**SESSION 7**      **ANTIBIOTIC RESISTANCE AND NOVEL ANTI-  
INFECTIVES**

**Chairperson:**    **Samuel Miller**, University of Washington, Seattle,  
Washington, USA

**Action and mechanism for MCR polymyxin resistance**

Youjun Feng [20'+10']

Presenter affiliation: Zhejiang University, Zhangzhou, China. 100

**ATP-dependent dynamic protein aggregation regulates bacterial  
dormancy depth critical for antibiotic tolerance**

Fan Bai [10'+5']

Presenter affiliation: Peking University, Beijing, China. 101

**Development of new antibiotics to treat tuberculosis**

Bing Zhang, Jun Li, Xiaolin Yang, Lijie Wu, Jia Zhang, Yang Yang, Yao  
Zhao, Lu Zhang, Xiuna Yang, Xiaobao Yang, Xi Cheng, Zhijie Liu,  
Biao Jiang, Hualiang Jiang, Luke W. Guddat, Haitao Yang, Zihe Rao  
[10'+5']

Presenter affiliation: Shanghai Institute for Advanced Immunochemical  
Studies, Shanghai, China. 102

**Designing of chimeric lysins as non-traditional therapeutics  
against Streptococcal infections**

Hang Yang, Yujing Gong, Dehua Luo, Xiaohong Li, Irina Etobayeva,  
Jingjing Xu, Daniel C. Nelson, Jin He, Hongping Wei [10'+5']

Presenter affiliation: Wuhan Institute of Virology, Chinese Academy of  
Sciences, Wuhan, China. 103

**Native CRISPR-Cas mediated genome editing facilitates the  
treatment of clinical multidrug resistant *Pseudomonas*  
*aeruginosa* based on collateral sensitivity**

Zeling Xu, Ming Li, Yanran Li, Huiluo Cao, Hua Xiang, Aixin Yan  
[10'+5']

Presenter affiliation: The University of Hong Kong, Hong Kong SAR,  
China. 104

**A conserved cytosine-rich sRNA interacting with mycobacterial  
ribosome and mediate rifampicin tolerance during within-host  
evolution**

Chuan Wang, Xiaofan Liu, Qingyun Liu, Yue Ding, Qian Gao [10'+5']

Presenter affiliation: Fudan University, Shanghai, China. 105

**SESSION 8**      BACTERIAL TOXINS AND PATHOGENESIS

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

**EPEC and Shigella host cell interactions**

Elizabeth L. Hartland [20'+10']

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

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**Manipulation of the host ubiquitin system by *Legionella***

Tomoko Kubori, Tomoe Kitao, Hiroki Nagai [20'+10']

Presenter affiliation: Graduate School of Medicine, Gifu University,  
Gifu, Japan.

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**Structural insights into non-canonical ubiquitination catalyzed by  
SidE from *Legionella pneumophila***

Yong Wang, Miao Shi, Han Feng, Yalan Zhu, Songqing Liu, Ang Gao,  
Pu Gao [10'+5']

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

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**Identification of a bacterial effector deubiquitinase specific for  
linear ubiquitin chains**

Yongqun Zhu [10'+5']

Presenter affiliation: Zhejiang University, Hangzhou, China.

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**Regulation of host immune responses via deubiquitination  
catalyzed by a bacterial deamidase**

Zhao-Qing Luo, Ninghai Gan, Hongxin Guan, Songyun Ouyang  
[10'+5']

Presenter affiliation: Purdue University, West Lafayette, Indiana.

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**Extracellular sphingomyelinase Rv0888 of *Mycobacterium  
tuberculosis* contributes to pathological lung injury of  
*Mycobacterium smegmatis* in mice via inducing formation of  
neutrophil extracellular traps**

Guanghui Dang, Yingying Cui, Lei Wang, Tiantian Li, Ziyin Cui,  
Ningning Song, Liping Chen, Hai Pang, Siguo Liu [10'+5']

Presenter affiliation: Harbin Veterinary Research Institute, Chinese  
Academy of Agricultural Sciences, Harbin, China.

111

**Bacterial mimicry of eukaryotic linear motifs**

Hugo C. Samano-Sanchez, Philipp Walch, Joel Selkrig, Nassos Typas, Toby J. Gibson [10'+5']

Presenter affiliation: European Molecular Biology Laboratory, Heidelberg, Germany.

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**Self regulating MARTX toxins suppress proinflammatory signaling in response to cytoskeletal collapse**

Patrick J. Woida, Karla J. Satchell [20'+10']

Presenter affiliation: Northwestern University Feinberg Schol of Medicine, Chicago, Illinois.

113

**Single cell, super-resolution imaging reveals acid-dependent SPI-2 gene regulation by SsrB**

Linda J. Kenney [20'+10']

Presenter affiliation: National University of Singapore, Singapore; University of Illinois-Chicago, Chicago, Illinois.

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THURSDAY, April 11—3:30 PM

**SESSION 9** REGULATION OF GENE EXPRESSION AND VIRULENCE TRAITS IN PATHOGENIC MICROBES

**Chairperson:** **Craig Roy**, Yale University School of Medicine, New Haven, Connecticut, USA

**Cyclic-di-GMP regulation promotes survival of a slow-replicating subpopulation of intracellular *Salmonella* Typhimurium**

Erik Petersen, Erez Mills, Samuel I. Miller [20'+10']

Presenter affiliation: University of Washington, Seattle, Washington.

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**Comparative transcriptomics identifies a single SNP mutation that controls virulence of African *Salmonella***

Jay C. Hinton [20'+10']

Presenter affiliation: University of Liverpool Institute of Integrative Biology, Liverpool, United Kingdom.

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**Innate immunity to cytosolic LPS—Pyroptosis and beyond**

Feng Shao [20'+10']

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

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## KEYNOTE SPEAKER

### **UTI complexity results from diversity at the bacterial-host interface**

Ashlee M. Earl, Henry L. Schreiber, IV, Valerie O'Brien, Caitlin N. Spaulding, Natalie S. Omattage, Jonathan Livny, Thomas J. Hannan, Karen W. Dodson, Peng Yuan, Scott J. Hultgren [35'+10']  
Presenter affiliation: Washington University School of Medicine, St. Louis, Missouri.

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THURSDAY, April 11—6:00 PM

### **COCKTAILS and BANQUET**

FRIDAY, April 12—9:00 AM

### **SESSION 10**      HOST RESPONSE TO BACTERIAL INFECTION II

**Chairperson:**      **Elizabeth Hartland**, Monash University, Clayton, Australia

#### **Modulation of host immunity by bacterial effector proteins**

Craig R. Roy [20'+10']

Presenter affiliation: Yale University School of Medicine, New Haven, Connecticut.

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#### **Host responses to intracellular LPS—Pyroptosis and beyond**

Vijay Rathinam [20'+10']

Presenter affiliation: UConn Health School of Medicine, Farmington, Connecticut.

120

#### **Guanylate-binding proteins and inflammasomes in the human defenses against *Francisella tularensis***

Thomas Henry [20'+10']

Presenter affiliation: INSERM, Centre International de Recherche en Infectiologie, University of Lyon, Lyon, France.

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**Sequential assembly of a tripartite toxin induces activation of the inflammasome**

Daniel R. Fox, Anukriti Mathur, Shouya Feng, Jenni A. Hayward, Chinh Ngo, Si Ming Man [10'+5']

Presenter affiliation: John Curtin School of Medical Research, The ANU, Canberra, Australia.

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**Ubiquitination-mediated host defense against bacterial infection**

Fubing Li, Yang Li, Huichun Liang, Tao Xu, Ceshi Chen, Xiaopeng Qi [10'+5']

Presenter affiliation: Kunming Institute of Zoology, Kunming, China.

123

**Pathogen blockade of TAK1 triggers caspase-8-dependent cleavage of gasdermin D and cell death**

Egil Lien [20'+10']

Presenter affiliation: UMass Medical School, Worcester, Massachusetts.

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**Identification of cell intrinsic immune mechanisms that control bacterial and viral infection**

Neal M. Alto [20'+10']

Presenter affiliation: University of Texas Southwestern Medical Center, Dallas, Texas.

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