CONFERENCE PROGRAM

Asia-Pacific Biofilms 2022

October 18-23, 2022 | Guangzhou, China

On behalf of the Organizing Committee, you are cordially invited to attend the virtual conference of the 4th International Conference on Biofilms (Asia-Pacific Biofilms 2022), held on October 18-23 of 2022, in Guangzhou, China.

This conference aims to bring together leading academic scientists, engineers, and clinicians globally, primarily from the Asia-Pacific area including China and Singapore from Asia, Australia and New Zealand from Oceania, United States and Canada from America, and many other countries/regions to share new knowledge and research progresses in microbial biofilms. Scope of APB 2022 includes molecular biology of biofilms, quorum sensing, industrially and clinically relevant biofilms and emerging technologies for biofilm mitigation. This conference will serve as a major platform that create collaborative opportunities for biofilm researchers in the Asia-Pacific area, and to facilitate our interactions with colleagues from Europe (Euro Biofilms) and the United States (ASM Biofilms). For the first time, APB will be organizing a signature program for the conference. The signature program for APB 2022 is Biofilms in Australia, from Biomaterials-Microorganism Interface to Recalcitrant Infections, co-organized by the Department of Infectious Diseases, the Alfred Hospital and Monash University.

Highlighted topics include:

1. **Bioinformatics analysis in biofilms**
2. **Biofilms development and control**
3. **Biofilms antimicrobial resistance**
4. **Communication and signaling factors in biofilms**
5. **Rapid detection and application to biofilms and microorganisms**
6. **Virulence and toxins on clinical biofilms**
7. **Evolution and stress tolerance in Biofilms**
8. **Industrial and applied biofilms research**

The Organizing Committee are making every effort to make this a memorable and valuable biofilm conference.

Sincerely yours,

Birthe Kjellerup
Liang Yang
Yue Qu
Zhenbo Xu
The Organizing Committee

Organization

Organizers

South China University of Technology

Southern University of Science and Technology

The Singapore Centre for Environmental Life Sciences Engineering (SCELSE)

Department of Infectious Diseases (DID), the Alfred Hospital and Monash University

Co-Organizers

Academic Exchange Information Centre (AEIC)

Supporting parties

ESCMID Study Group for Biofilms

China Society for Microbiology (CSM)

Overseas Chinese Society for Microbiology (SinoMicro)

ELSEVIER

Microbiology Australia (The official journal of Australian Society for Microbiology)

Monash-WMU Alliance

Organizing Committee

Founder and Honorable President

Mark Shirtliff

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Founder and Honorable President

Mark Shirtliff

(1969-2018)

Dr. Mark Shirtliff was a professor at University of Maryland-Baltimore, where he held a primary appointment in the Department of Microbial Pathogenesis in the University of Maryland School of Dentistry and a secondary appointment in the Department of Microbiology and Immunology in the University of Maryland School of Medicine. Mark was also the lead inventor and co-founder of the vaccine company Serenta Biotechnology, LLC that was established in 2017. The license is based on a multivalent vaccine strategy against infections caused by *Staphylococcus aureus*. Further development of the vaccine is continued by Dr. Jan Harro in the Shirtliff-Harro Lab at UMSOD and by Birthe Kjellerup-Shirtliff as Chief Scientific Officer in Serenta LLC.

Mark Shirtliff was a leading expert in the field of biofilm in the US and internationally. His childhood in the foothills of the Canadian Rocky Mountains lead him to University of Alberta, where he graduated with a bachelor in Geo-microbiology. After this, he moved to Texas, US to continue his education. Originally Mark wanted to pursue medical school to become a medical doctor, but he quickly learned that he over time would be able to help more people by performing research thus his goal became to develop diagnostics and vaccines to prevent biofilm infections. Mark graduated with his Ph.D. in 2001 from University of Texas Medical Branch, Galvaston TX in the Department of Microbiology and Immunology. His thesis was titled "*Staphylococcus aureus*: Roles in Osteomyelitis."

During graduate school Mark was introduced to a fellow Canadian biofilm researcher Dr. Bill Costerton, who at that time was the Director of Center for Biofilm Engineering (CBE) at Montana State University in Bozeman, Montana. This was the beginning of an inspirational work relationship and friendship between Mark and Bill and a very prolific career in *Staphylococcus aureus* biofilm

research for Mark-but it was way too short!

Bill convinced Mark that she should move to Bozeman, Montana and the CBE in 2001 to continue working on biofilms and was initially funded to work on drinking water biofilms in Dr. Anne Camper's lab. He quickly obtained his own funding and returned to S. aureus research that was so important for him. The years at the CBE were instrumental in developing molecular tools, having important biofilm centered discussions and to get out in the wilderness to get great ideas. In 2003, Mark moved to Maryland and entered a tenure track position at UMB-Baltimore.

Mark was actively involved in leading the biofilm field forward. His engaging and very energetic way of behaving made him easy to talk to both about biofilms, science and completely other topics. He was very interested in listening to the junior scientists and to connect with the next generation in science. Therefore, mentoring and training of the next generation of biofilm scientists was a mission that he took seriously. Over the years, Mark trained many scientists in his lab-both graduate students, post docs and visiting scientists from around the world. He also initiated many collaborations globally and many of these excellent scientists are present at ChinaBiofilms 2019. He also organized numerous biofilm workshops at international conferences such as ASM Biofilms (American Society of Microbiology), ECCMID (European Congress of Clinical Microbiology & Infectious Diseases), EuroBiofilms and of course ChinaBiofilms 2017. Over the years, Mark was the author of more than 120 peer-reviewed scientific papers and book chapters on pathogenic microorganisms. He explored the biofilm mode of growth and the chronic diseases they cause.

Mark never forgot his Canadian roots and was a proud and energetic hockey (i.e. ice hockey) fan, who would travel far distances to cheer on his favorite team Edmonton Oilers. He also loved to take his family back to the Canadian Rockies to climb on glaciers and to tell great stories from his childhood and about interesting tree-ring counting studies and field trips as a geology major in college. He also kept in touch with colleagues at the CBE, which allowed him (and his family) to spend time in Montana during the summers. This would recharge his batteries with lots of fly fishing, floats on majestic rivers and good times with friends and family.

In Mark's honor, we have started the "Mark Shirtliff Memorial Biofilm Foundation" (https://markshirtliffbiofilmfoundation.org/). Donations can be made via the website. The goal of the foundation is to support and encourage junior biofilm researchers to travel and initiate collaborations with other biofilm groups on a global scale.

The Board of Trustees include several members, who are present at ChinaBiofilms 2019: Birthe V. Kjellerup, Chair (Mark's wife), Garth D. Ehrlich, Secretary and Treasurer, Kendra Rumbaugh, Vice President, James Kaper, Zhenbo Xu and Annette Moter. Please feel free to contact any of us if you have any questions or would like to share a good story or memory about Mark.

We hope that you will participate in making Asia-Pacific Biofilms 2022 a successful follow-up to the China Biofilms series conferences that Mark was an important founder for.

South China University of Technology

South China University of Technology (SCUT) is a leading educational institution in China, a public research-intensive university directly governed by the Chinese Ministry of Education. Located in Guangzhou, the center of southern China, it covers a total area of 405 hectares, consisting of three campuses: Wushan Campus, University Town Campus, and Guangzhou International Campus.

SCUT was first founded in 1952 by merging the engineering schools and departments of a number of major universities and polytechnic universities from five provinces in central and southern China. In 2016, SCUT was ranked the world's top 300 universities by the Academic Ranking of World Universities, with its Engineering at 22nd. According to Thomson Reuters' Essential Science Indicators, SCUT has chemistry, materials science, engineering, agricultural science, physics, biology and biochemistry, computer science, and environment and ecology ranked in the global top 1%.

School of Food Science and Engineering (SFSE) was established newly in November 2015 through the reorganization of the School of Light Industry and Food Science, however, its history can be dated back to 1952, the beginning of the University. A national evaluation of key discipline carried out in 2012 showed that the Food Science and Engineering in the School were ranking No.3 among Chinese universities.

Southern University of Science and Technology

Southern University of Science and Technology (SUSTech) is a research-oriented public university founded in Shenzhen, China's innovation center. From their inception, SUSTech has

attached enormous importance to attracting high-quality talents to its faculty. Through continuing efforts to introduce world-class educators, SUSTech is proud to have over 800 faculty members on staff, and they continue to expand its faculty with amazing talent from all over the world. Many of their faculty have been honored with selection into national or regional talent programs, and SUSTech is keen to nurture and cultivate its talented staff.

The Singapore Centre for Environmental Life Sciences Engineering (SCELSE)

SCELSE

Singapore Centre for Environmental Life Sciences Engineering

The Singapore Centre for Environmental Life Sciences Engineering (SCELSE) is a unique interdisciplinary Research Centre of Excellence (RCE), funded by National Research Foundation, Singapore Ministry of Education, Nanyang Technological University (NTU) and National University of Singapore (NUS). Hosted by NTU in partnership with NUS, SCELSE is linking new insights from the life sciences with expertise from the emerging technologies in engineering and natural sciences to understand, harness and control microbial biofilm communities and microbiomes. The union of these fields has established a new discipline of environmental life sciences engineering (ELSE). SCELSE mission is “To discover, control and direct the behavior of microbial biofilm communities and microbiomes for sustainable environmental, engineering, public health and medical applications.”

SCELSE research focuses on the universality of microbial biofilm communities. Unravelling microbial biodiversity and function in complex microbial communities enables SCELSE researchers to identify key mechanisms involved in biofilm biology. The exploratory power available to SCELSE researchers, from laboratory-scale to full-scale environmental, medical and engineered systems, combined with an unrivalled level of interdisciplinary expertise places SCELSE in a unique position, to deliver a comprehensive understanding of all aspects of a microbial system.

SCELSE is deciphering the biology of microbial biofilm communities and microbiomes in environmental and engineered systems. Importantly, the use of new molecular tools (genomics, proteomics, and metabolomics) for prospecting biofilms will demonstrate communal metabolic capacity and diversity, far surpassing the combined activities of individual member species. Moreover, obtaining high-resolution information from huge multi-layered databases, now possible through significant advances in analytical, bio-informatics, and bio-computational tools, will facilitate our understanding of community behavior in complex natural and engineered habitats.

Information gained on basic mechanisms of microbial community signaling interactions at micro-scales will be evaluated, integrated and quantified in large-scale experiments. Since microbial interactions with the environment are governed by surface chemistry, SCELSE's approach also accommodates the merging of nano-technological tools. Ecological theories that link natural processes at these different scales predict biofilm community behavior in the face of environmental stresses.

Department of Infectious Diseases (DID), the Alfred Hospital and Monash University

MONASH University

The Department of Infectious Diseases (DID)

Monash is a modern, global, research-intensive university, delivering education and research excellence in Australia and across the Indo-Pacific. We're making a positive impact on today's global challenges – whether that's by mitigating climate change, easing geopolitical insecurity or fostering healthy communities.

The Department of Infectious Diseases (DID) integrates clinical services with biomedical research and teaching. With researchers in Alfred Health's Infectious Diseases Unit, our expertise spans general infectious diseases to HIV/AIDS and tuberculosis. The Department of Infectious Diseases is a premier centre for clinical and biomedical research and education, offering undergraduate and postgraduate study programs. We integrate clinical services with clinical and basic science research. The clinical services work closely with research staff and laboratories are based within the Burnet Institute building, with a presence within the Central Clinical School.

AEIC Academic Exchange Information Center

AEIC Academic Exchange Information Center, also known as AEIC, is a well-developed international exchange platform co-founded by colleges, scientific research institutions and enterprises. We concentrate on global professional academic forces and devotes to the academic exchange activities such as scientific and technological information dissemination, scholars scientific research exchanges and social hotspots analysis. Now we have received big support from many colleges and research institutes. Adhering to the spirit of professional, focus and concentrate, we provide an international professional exchange platform for scientific and technological academic communication to realize the transformation of academic achievements.

AEIC cooperates with many international presses including Springer, Elsevier, IEEE, Taylor & Francis Group, IOP, EDP, ASME, SPIE, Academic Press, American Scientific Publishing, DEStech Publications, TTP and Atlantis Press. AEIC calls for papers from academic conferences and publishs papers for EI or CPCI index. Outstanding papers will be recommended for publication in well-known international journals such as the ones indexed by SCI, EI, etc.

ESCMID Study Group for Biofilms (ESGB)

The objective of ESGB is to increase knowledge on various aspects of microbial biofilms with as ultimate goals improved diagnostic tools for biofilm infections, and better approaches to prevent and treat such infections. In order to obtain these goals, a multidisciplinary approach is necessary and one of the objectives of the ESGB to facilitate cooperation between scientist working on biofilms in different disciplines.

Chinese Society for Microbiology (CSM)

Chinese Society for Microbiology (CSM) is a national, academic and public welfare legal person social organization voluntarily formed by National Microbiology scientific and technological workers and units and registered by the Ministry of civil affairs of the people's Republic of China according to law. It is a non-profit social organization and a social force for the development of Microbiology in China. The Chinese Society for microbiology was established on December 18th, 1952. As early as 1928, initiated by Wu Liande, Xie Heping and Lin Zongyang, pioneers of modern medicine in China, the Chinese society of microbiology was established in Beijing. In 1937, it was renamed the Chinese society of pathology and microbiology, and moved to Shanghai. It has more than 50 members and held academic seminars. In 1945, the conference was held in Guangzhou, attended by more than 100 people. After the founding of new China in 1949, the Chinese society of microbiology was established at the capital assembly of the Chinese Medical Association in 1950. This is the gestation stage before the official establishment of the Chinese society of Microbiology in 1952.

Overseas Chinese Society for Microbiology

海外华人微生物学会

Overseas Chinese Society for Microbiology

Overseas Chinese Society for Microbiology (Sino-Micro) is a registered non-for-profit organization formed by overseas Chinese researchers who study microbiology. Our goal is to establish a social network that will facilitate the advancement of our research programs and the development of our careers. In addition, we wish to work as a group to create a platform for enhancing scientific interactions with our colleagues in China. Current Sino-Micro members are primarily principal investigators in the USA. However, our organization is open to all overseas Chinese microbiologists.

Microbiology Australia (The official journal of Australian Society for Microbiology)

Microbiology Australia, the journal of the Australian Society for Microbiology, is produced online and in print four times a year. The journal contains scientific papers, technical notes, book reviews, conference information, data on new products and services in microbiology, and material for tertiary students, in addition to providing detail on ASM activities. Microbiology Australia comprises mostly thematic issues focused on the areas of greatest importance to microbiology. Themes are determined by the Editorial Board and Guest Editor(s), with the exception of a biennial issue that features Breaking Research of ASM's Early Career Researchers.

The Australian Society for Microbiology (ASM) is a not-for-profit organisation, formed in 1959 as a learned society devoted to furthering the science of microbiology. In 1976, the ASM became an incorporated professional society, and has a membership approaching 2000. The society functions in "bringing microbiologists together" with the objective of advancing the science of microbiology in Australia.

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Elsevier as a global leader in information and analytics, Elsevier helps researchers and healthcare professionals advance science and improve health outcomes for the benefit of society. We do this by facilitating insights and critical decision-making for customers across the global research and health ecosystems. In everything we publish, we uphold the highest standards of quality and integrity at scale to ensure value to our customers.

Antibiotics

antibiotics
an Open Access Journal by MDPI

Antibiotics is an international, peer-reviewed, open access journal published online by MDPI, Basel, Switzerland. The scope of Antibiotics includes but is not limited to pharmacodynamics, uses of antibiotics, antimicrobial stewardship, antibiotic resistance, and novel antimicrobial agents. The journal's Impact Factor is 5.222 (2021), ranking Q1 in 'Pharmacology & Pharmacy" in JCR.

Membranes

membranes
an Open Access Journal by MDPI

Membranes (ISSN 2077-0375) is an open access journal with its latest impact factor of 4.562, ranking 21/88 (Q1) in Polymer Science and Q2 in Chemical Engineering (miscellaneous). It provides an interdisciplinary forum for publishing papers which advance the fields of: Membrane Processing and Engineering, Membrane Applications, Biological Membrane Functions, Biological Membrane Dynamics and Computation, Biological Membrane Composition and Structures, Biofilms.

Agenda

Time and date shows here refers to China Standard Time (GMT+8).
Asia: GMT+9 for JST, GMT+7 for WIT, GMT+5:30 for IST
Oceania: GMT+10 for AEST, GMT+12 for NEST
U.S. and Canada: GMT-4 for EDT, GMT-5 for CDT, GMT-6 for MDT, GMT-7 for PDT
Europe and U.K.: GMT+2 for CEST, GMT+1 for BST

Oct 18th Registration	
16:00-18:00	**Registration and Meeting platform test**
Oct 19th Workshop	
8:00-9:30	**Animal Models in Biofilm Research** **Modeling biofilm-associated wound infections** **Kendra Rumbaugh, Texas Tech University, Lubbock** **Animal models of orthopedic infection** **Janette Harro, University of Maryland, Baltimore**
9:30-10:00	**Meet the speakers / Coffee break**
10:00-11:30	**Control strategies for bacterial biofilms – the need for standard methods?** **Why the need for standard methods?** **Paul Stoodley, The Ohio State University, Columbus** **Standardized Biofilm Methods** **Kelli Buckingham-Meyer, Montana State University, Bozeman** **Statistical considerations in image analysis** **Albert Parker, Montana State University, Bozeman**
11:30-15:00	**Meet the speakers 11:30-11:45 / Lunch 11:45-14:00**

15:00-16:00	**Construction of microbial biofilms and detection- How to do it in a correct way?** Yulong Tan, Qingdao Agricultural University, Qingdao Zhenbo Xu, South China University of Technology, Guangzhou Renyou Gan, Singapore Institute of Food and Biotechnology Innovation, Singapore Junyan Liu, Zhongkai University of Agriculture and Engineering, Guangzhou Xuejie Li, South China University of Technology, Guangzhou
16:00-16:30	Meet the speakers / Coffee break
16:30-17:30	**Biofilms mediated infection- Difference between *in vitro* and *in vivo*** Yulong Tan, Qingdao Agricultural University, Qingdao Ke Wang, First Affiliated Hospital of Guangxi Medical University, Nanning Renyou Gan, Singapore Institute of Food and Biotechnology Innovation, Singapore Yao Sun, First Affiliated Hospital of Wenzhou Medical University, Wenzhou Yu Li, Qiqihar Medical University, Qiqihar
17:30-19:00	Meet the speakers 17:30-17:45 / Dinner & Networking 17:45-19:00
19:00-20:30	**Getting your article published in Biofilm** Tom Coenye, Ghent University, Ghent Birthe Kjellerup, University of Maryland, College Park
20:30-20:45	Meet the speakers

Oct 20th Medical Microbiology

Session 1	
Chair	**Chuanwu Xi, University of Michigan, Ann Arbor** **Zhenbo Xu, South China University of Technology, Guangzhou**
9:00-9:10	**Opening ceremony** **Birthe Kjellerup, University of Maryland, College Park**
9:10-9:40	**Free-floating biofilm-like aggregates: expanding the biofilm conceptual developmental model** **Paul Stoodley, The Ohio State University, Columbus**
9:40-10:10	**Understanding biofilms in wounds** **Kendra Rumbaugh, Texas Tech University, Lubbock**
10:10-10:25	**Modeling polymicrobial infection in the CF-like airway of *Scnn1* transgenic mice** **Janette Harro, University of Maryland, Baltimore**
10:25-10:40	**Immunity to *S. aureus* skin infections** **Nathan Archer, Johns Hopkins University, Baltimore**
10:40-10:55	**Meet the speakers / Coffee break**
Session 2	
Chair	**Liang Yang, Southern University of Science and Technology, Shenzhen** **Guanglei Qiu, South China University of Technology, Guangzhou**
10:55-11:25	**To be determined** **Daniel Wozniak, The Ohio State University, Columbus**
11:25-11:55	**New insight into the biofilm matrix of *P. aeruginosa*** **Matthew Parsek, University of Washington, Seattle**
11:55-12:10	**Candida biofilms: importance, regulation, and evolution** **Clarissa Nobile, University of California, Merced**
12:10-12:25	**Lysocin E - a novel antibiotic potentiated in the host** **Hiroshi Hamamoto, The University of Tokyo, Bunkyoku**
12:25-14:00	**Meet the speakers 12:25-12:40 / Lunch 12:40-14:00**

Session 3	
Chair	**Wei Hu, Shandong University, Jinan** **Yulong Tan, Qingdao Agricultural University, Qingdao**
14:00-14:30	**Reduced antimicrobial susceptibility in microbial biofilms: where are we and where should we be going?** **Tom Coenye, Ghent University, Ghent**
14:30-15:00	**The clinical importance of interkingdom biofilms in the oral cavity and beyond** **Gordon Ramage, University of Glasgow, Glasgow**
15:00-15:30	**Bacterial second messenger cyclic-di-GMP and its regulation and inhibition in *Pseudomonas aeruginosa*** **Luyan Ma, Institute of Microbiology of the Chinese Academy of Sciences, Beijing**
15:30-15:45	**Quorum sensing as a target for controlling biofilm formation in *Acinetobacter baumannii*** **Celia Mayer, University of Santiago de Compostela, Galicia**
15:45-16:00	**Meet the speakers / Coffee break**
Session 4	
Chair	**Yue Qu, Monash University, Melbourne** **Junyan Liu, Zhongkai University of Agriculture and Engineering, Guangzhou**
16:00-16:30	**Regulation of biofilm formation by cyclic di-GMP signaling** **Ute Römling, Karolinska Institute, Stockholm**
16:30-17:00	**Pathogenesis of polymicrobial biofilm-associated infections** **Kimberly Kline, Nanyang Technological University, Singapore**
17:00-17:30	**To be determined** **Po-Ren Hsueh, National Taiwan University Hospital, Taipei**
17:30-17:45	**Spatial transcriptome uncovers rich coordination of metabolism in bacterial community** **Jintao Liu, Tsinghua University, Beijing**
17:45-18:00	**Engineered polyurea (PURE) dendrimers are a potential alternative to conventional antibiotics** **Sandra Pinto, University of Lisbon, Lisbon**
18:00-18:15	**Evolution of biofilm cells in response to antibiotics showcases the role of biofilms as diversity incubators for the microbial world** **Anahit Penesyan, Macquarie University, Sydney**
18:15-20:00	**Meet the speakers 18:15-18:30 / Dinner & Networking 18:30-20:00**

Oct 21st Biofilms in Australia

Session 1	**Biomaterial and microorganism interface**
Chair	**Helmut Thissen, CSIRO, Canberra**
7:55-8:00	**Opening: Welcome to the Australian Biofilms meeting** **Yue Qu, Monash University, Melbourne**
8:00-8:40	**Colloidal crystal based micro- and nanostructured surfaces to control bacterial colonization** **Peter Kingshott, Swinburne University of Technology, Melbourne**
8:40-9:10	**Osteoblasts response on two-tiered bactericidal architecture fabricated on titanium surfaces** **Elena Ivanova, Royal Melbourne Institute of Technology, Melbourne**
9:10-9:40	**Biointerfaces – opportunities for the effective control of medical device related infections** **Helmut Thissen, CSIRO, Canberra**
9:40-10:00	**Meet the speakers / Coffee break**
Session 2	**Microbial factors influencing biofilm formation**
Chair	**Yue Qu, Monash University, Melbourne**
10:00-10:30	**The genetic basis of mixed species biofilm development** **Scott Rice, CSIRO, Canberra**
10:30-11:00	**Assessing the role of pharyngeal cell surface glycans in Group A *Streptococcus* biofilm formation** **Heema Vyas, The University of Sydney, Sydney**
11:00-11:30	**Biofilms, *luxS* gene and virulence of the oral bacterium *Campylobacter concisus*** **Taghrid Istivan, Royal Melbourne Institute of Technology, Melbourne**
11:30-11:50	**Meet the speakers / Coffee break**
Session 3	**Biofilms and medical device-related infections**
Chair	**David McGiffin, Monash University, Melbourne**
11:50-12:30	**Development and clinical trials of antimicrobial contact lenses** **Mark Wilcox, The University of New South Wales, Sydney**

12:30-13:00	**Biofilm-related VAD driveline infections and phage therapy** Anton Peleg, Monash University, Melbourne
13:00-13:30	**N-acetyl cysteine as a biofilm disruptor and an aid to eradication** Jim Manos, The University of Sydney, Sydney
13:30-14:00	Meet the speakers / Coffee break
Session 4 **Chair**	**Biofilms and other chronic infections** Xenia Kostoulias, Monash University, Melbourne
14:00-14:30	**The dysbiotic polymicrobial biofilm nature of chronic oral disease** Stuart Dashper, Melbourne University, Melbourne
14:30-15:00	**Development of stimuli-responsive hydrogel for treatment of mature biofilms in murine wound infection models** Zlatko Kopecki, University of South Australia, Adelaide
15:00-15:30	**Do biofilms play a role in the recurrent vulvovaginal candidiasis (RVVC)?** Yue Qu, Monash University, Melbourne
15:30-16:00	**Bench to bedside and back again: targeting host-microbial interactions to treat biofilm infections** Ruth Thornton, The University of Western Australia, Perth
16:00-16:15	**Closing remarks: What we need from biofilm research: From clinicians' perspective** David McGiffin & Anton Peleg, Monash University, Melbourne
Chair	**Oct 21st Early Career Researchers and Students** Yulong Tan, Qingdao Agricultural University, Qingdao Junyan Liu, Zhongkai University of Agriculture and Engineering, Guangzhou
19:00-19:08	**To be determined** Xuejie Li, South China University of Technology, Guangzhou
19:08-19:16	**Microbial interaction between *L. plantarum* and *S. cerevisiae*: Transcriptome level mechanism of cell-cell antagonism** Nixuan Gu, South China University of Technology, Guangzhou
19:16-19:24	**Antibiotics-free nanoparticles eradicate *Helicobacter pylori* biofilms and intracellular bacteria** Shuqi Zhang, Sun Yat-sen University, Guangzhou
19:24-19:32	**Persistence of *Listeria monocytogenes* ST5 in Ready-to-Eat Food Processing Environment** Xin Liu, University of Shanghai for Science and Technology, Shanghai
19:32-19:40	**The role of Flagella in biofilm formation of emetic *Bacillus cereus*** Yangfu Li, Jinan University, Guangzhou
19:40-19:48	**Effect of sub-MIC of antibiotics on *Staphylococcus aureus* biofilm formation** Yaqin Li, South China University of Technology, Guangzhou
19:48-19:56	**Charge switchable nanoparticles anti-biofilm and anti-virulence activities for chronic *Pseudomonas aeruginosa* Lung Infection management** Pengyu Li, Sun Yat-sen University, Guangzhou

Oct 22nd Foodborne Microbiology

Venue: Nanyue Hall

Session 1 **Chair**	**Zhenbo Xu, South China University of Technology, Guangzhou** **Lei Yuan, Yangzhou University, Yangzhou**
9:00-9:30	**A novel method for controlling *Listeria monocytogenes* on lettuce** **Steve Flint, Massey University, Palmerston North**
9:30-9:45	**To be determined** **Boce Zhang, University of Florida, Gainesville**
9:45-10:00	**Study on the removal of bacterial biofilm by photodynamic sterilization** **Yong Zhao, Shanghai Ocean University, Shanghai**
10:00-10:15	**Mechanism of Acid and Alkali Electrolyzed Water on the Elimination of *Listeria monocytogenes* Biofilm Based on Proteomic Analysis** **Jianxiong Hao, Hebei University of Science and Technology, Shijiazhuang**
10:15-10:30	**The Molecular Mechanism of Inhibition on Staphyloxanthin and Biofilm of *Staphylococcus aureus* by Naftifine Derivative JX08806** **Chunlei Shi, Shanghai Jiaotong University, Shanghai**
10:30-10:45	**Meet the speakers / Coffee break**
Session 2 **Chair**	**Xihong Zhao, Wuhan Institute of Technology, Wuhan**
10:45-11:00	**Inhibitory effect of biofilm-degrading enzyme on the biofilm formation and eracidation of *Vibrio parahaemolyticus*** **Zunying Liu, Ocean University of China, Qingdao**
11:00-11:15	**Study on the quorum sensing regulation mechanism of dominant spoilage bacteria in aquatic products processing** **Hongman Hou, Dalian Polytechnic University, Dalian**
11:15-11:30	**Cold atmospheric plasma to remove bacterial biofilms** **Anne Mai-Prochnow, Sydney University, Sydney**
11:30-11:45	**Control of some of foodborne pathogens in planktonic and biofilm Form by electron beam irradiation and natural antibacterial substances** **Xin Wang, Northwest Agriculture and Forestry University, Xianyang**
11:45-12:00	**Progress of *Listeria monocytogenes* biofilm risk** **Qingli Dong, University of Shanghai for Science and Technology, Shanghai**
12:00-12:15	**Effects of freezing stress on *Staphylococcus aureus* biofilm formation and the inhibitory effect of biochanin A** **Na Guo, Jilin University, Changchun**
12:15-12:30	**Multi-omics Reveals the *Bifidobacterium* Biofilm Formation Mechanism and Fermentation Regulation** **Wenwei Lu, Jiangnan University, Wuxi**
12:30-14:00	**Meet the speakers 12:30-12:45 / Lunch 12:45-14:00**

Session 3	
Chair	**Junyan Liu, Zhongkai University of Agriculture and Engineering, Guangzhou**
14:00-14:30	**Biofilm resilience does not rely exclusively on bacterial viability** **Manuel Simões, University of Porto, Porto**
14:30-14:45	**A combined study on the antibiotic resistance and biofilm-forming abilities of *C. jejuni* and *C. coli* isolates from retail raw chicken samples** **Efstathios Giaouris, University of the Aegean, Mytilini**
14:45-15:00	**Regulatory mechanism of quorum sensing system and second messenger on biofilm formation in *Listeria monocytogenes*** **Xiaomei Bie, Nanjing Agricultural University, Nanjing**
15:00-15:15	**The Rcs system in Enterobacteriaceae: envelope stress responses and morphology regulation** **Jingyu Chen, China Agricultural University, Beijing**
15:15-15:30	**Risk identification and biofilm control of *Listeria monocytogenes*** **Moutong Chen, Guangdong Institute of Microbiology, Guangzhou**
15:30-15:45	**Meet the speakers / Coffee break**
Session 4	
Chair	**Yulong Tan, Qingdao Agricultural University, Qingdao**
15:45-16:15	**Spatio-temporal diversification of *Bacillus subtilis* cell types in surface-associated communities** **Romain Briandet, University of Paris-Saclay, Paris**
16:15-16:45	**The training and researching on biofilms in Vietnam: the current status and the need of international collaboration** **Dinh Toi Chu, Vietnam National University, Hanoi**
16:45-17:00	**Battle against viable but nonculturable state in rice and flour products: control and detection** **Junyan Liu, Zhongkai University of Agriculture and Engineering, Guangzhou**
17:00-17:15	**Discovery of antibacterial and anti-biofilm natural products** **Renyou Gan, Singapore Institute of Food and Biotechnology Innovation, Singapore**
17:15-17:30	**Screening of quorum-sensing inhibitors and construction of *luxS* gene knockout vector in *Leuconostoc citreum*** **Rihua Xu, Inner Mongolia University, Hohhot**
17:30-17:45	**How Gram-Negative Bacterial Cell Envelope Respond to Antimicrobial Stress** **Mingming Guo, Zhejiang University, Hangzhou**
17:45-19:00	**Meet the speakers 17:45-18:00 / Dinner & Networking 18:00-19:00**

Oct 22nd Basic Microbiology and Anti-Biofilms (Venue 2)

Venue: Nanhu Hall

Session 1

Chair	Yulong Tan, Qingdao Agricultural University, Qingdao
9:00-9:30	Targeting *Fusobacterium nucleatum* through Chemical Modifications of Host-Derived Transfer RNA Fragments Xuesong He, Dental Medicine of Harvard University, Boston
9:30-10:00	Interspecies interactions during bacterial biofilm formation Liang Yang, Southern University of Science and Technology, Shenzhen
10:00-10:30	Regulation of Pf Phage and Phage Defense in *Pseudomonas aeruginosa* Biofilms Xiaoxue Wang, South China Sea Institute of Oceanology, Guangzhou
10:30-10:45	The quorum sensing inhibitors from the medicinal and food plants Aiqun Jia, Hainan University, Haikou
10:45-11:00	Meet the speakers / Coffee break

Session 2

Chair	Liang Yang, Southern University of Science and Technology, Shenzhen
11:00-11:30	Self-organized canals enable long range directed material transport in bacterial communities Yilin Wu, Chinese University of Hong Kong, Hongkong
11:30-12:00	Antibiotic resistance and pathogenicity assessment of various Gardnerella sp. strains in local China Lichuan Gu, Shandong University, Jinan
12:00-12:15	Novel drug delivery strategies against biofilm infections Haiyan Hu, Sun Yat-Sen University, Guangzhou
12:15-12:30	Interactions between live and dead bacterial cells Xiangjun Gong, South China University of Technology, Guangzhou
12:30-14:00	Meet the speakers 12:30-12:45 / Lunch 12:45-14:00

Session 3 **Chair**	**Zhenbo Xu, South China University of Technology, Guangzhou**
14:00-14:30	**To be determined** **Maëlle Molmeret, University of Toulon, Toulon**
14:30-14:45	**Regulation of the T3SS and quorum sensing systems by a CspA family protein CspC in response to host environment in *Pseudomonas aeruginosa*** **Weihui Wu, Nankai University, Tianjin**
14:45-15:00	**To be determined** **Mariagrazia Di Luca, University of Pisa, Pisa**
15:00-15:15	**Inhibiting effect of pH responsive materials on oral biofilm** **Lei Cheng, Sichuan University, Chengdu**
15:15-15:30	**To be determined** **Sanna Maria Sillankorva, International Iberian Nanotechnology Laboratory, Braga**
15:30-15:45	**A red fluorescent small-molecule for visualization of c-di-GMP tetramer in live bacterial cells and real-time monitoring of biofilm formation on biotic and abiotic surfaces** **Ning Sun, Guangzhou First People's Hospital, Guangzhou**
15:45-16:00	**Meet the speakers / Coffee break**
Session 4 **Chair**	
16:00-16:15	**EPS from Biofilm: Structure and Functional Relationships** **Qingbin Guo, Tianjin University of Science and Technology, Tianjin**
16:15-16:30	**Joint cavity infection and biofilm treatment** **Qingjun Wei, Guangxi Medical University, Nanning**
16:30-16:45	**Self-produced dextranase prevents *Streptococcus mutans* biofilm and dental caries** **Nan Liu, Shandong Provincial Hospital, Jinan**
16:45-17:00	**To be determined** **Jing Lin, Guangzhou University, Guangzhou**
17:00-17:15	***Pseudomonas aeruginosa* Quorum Sensing Systems and Iron Homeostasis as Drug Discovery Targets** **Pinghua Sun, Jinan University, Guangzhou**

17:15-17:30	Nanoparticle-stabilized encapsulation of borneol and citral: Physicochemical characteristics, storage stability, and enhanced antibacterial activities Jianyu Su, South China University of Technology, Guangzhou
17:30-17:45	Highly surface-functionalized antimicrobial peptide formulations and their antibacterial mechanism against local infections Chao Lu, Jinan University, Guangzhou
17:45-18:00	Growth, biofilms and virulence factors of *Pseudomonas aeruginosa* suppressed by the synergistic interaction between bioactive plant extract and antibiotics Iqbal Ahmad, Aligarh Muslim University, Aligarh
18:00-19:00	Meet the speakers 18:00-18:15 / Dinner & Networking 18:00-19:00
Oct 22nd Early Career Researchers and Students	
Chair	Zhenbo Xu, South China University of Technology, Guangzhou Xuejie Li, South China University of Technology, Guangzhou
19:00-19:08	The AhR ligand phthiocol and vitamin K analogs as *Pseudomonas aeruginosa* quorum sensing inhibitors Tianyuan Jia, Southern University of Science and Technology, Shenzhen
19:08-19:16	Acquisition of Daptomycin Resistance by Enterococcus faecium Confers Collateral Sensitivity to Glycopeptides Yao Sun, Affiliated Hospital of Wenzhou Medical University, Wenzhou
19:16-19:24	Hypoxia-sensitive antibiotic adjuvant loaded liposomes eradicate *Pseudomonas aeruginosa* biofilms Yingying Sun, Sun Yat-sen University, Guangzhou
19:24-19:32	SPR detection on microbial biofilms: an initial study Haoyue Xue, South China University of Technology, Guangzhou
19:32-19:40	In vitro antimicrobial activity and resistance mechanisms of the new generation tetracycline agents, eravacycline, omadacycline, and tigecycline against clinical *Staphylococcus aureus* isolates Weiliang Zeng, Affiliated Hospital of Wenzhou Medical University, Wenzhou
19:40-19:48	Metabolism of Periodontal Pathogens: Their Regulatory Roles in Dysbiotic Subgingival Biofilm Jing Ding, Sun Yat-sen University, Guangzhou
19:48-19:56	Antimicrobial resistance and biofilm formation in *Candida* strains Jiaying Hong, South China University of Technology, Guangzhou
19:56-20:04	To be determined
20:04-20:12	Pathogenesis and biofilm formation in clinical *Klebsiella pneumoniae* strains Feifeng Zhong, South China University of Technology, Guangzhou
20:12-20:20	To be determined Jian Miao, University of Tennessee Health Science Center, Memphis
20:20-20:28	Detection of biofilm in Hypervirulence *Klebsiella pneumoniae* isolated from hospital Yuzhu Mao, University of Maryland, College Park

Oct 23rd Environmental Microbiology

Venue: Nanyue Hall

Session 1	
Chair	**Guanglei Qiu, South China University of Technology, Guangzhou** **Zhenbo Xu, South China University of Technology, Guangzhou**
9:00-9:30	**To be determined** **Stefan Wuertz, Nanyang Technological University (SCELSE), Singapore**
9:30-10:00	**To be determined** **April Gu, Cornell University, New York**
10:00-10:15	**To be determined** **Diane McDougald, University of Technology Sydney, Sydney**
10:15-10:30	**To be determined** **Enrico Marsili, University of Nottingham, Ningbo**
10:30-10:45	**Meet the speakers / Coffee break**
Session 2	
Chair	**Yichao Wu, Huazhong Agricultural University, Wuhan** **Faqian Sun, South China University of Technology, Guangzhou**
10:45-11:15	**Biofilms & Beer** **Darla Goeres, Montana State University, Bozeman**
11:15-11:45	**Extracellular DNA in Natural and Engineered Environmental Systems** **Bin Cao, Nanyang, Technological University (SCELSE), Singapore**
11:45-12:00	***Staphylococcus aureus* biofilm cell wall phenotypic changes associated with biofilm age and water stress result in increased disinfectant tolerance** **Honghua Hu, Macquarie university, Sydney**
12:00-12:15	**To be determined** **Rongchang Wang, Tongji University, Shanghai**
12:15-12:30	**Interactions between prescription drugs and biofilms in sewer system** **Yuan Ren, South China University of Technology**
12:30-14:00	**Meet the speakers 12:30-12:45 / Lunch 12:45-14:00**

Session 3 **Chair**	**Shanquan Wang, Sun Yat-sen University, Guangzhou** **Guanglei Qiu, South China University of Technology, Guangzhou**
14:00-14:30	**Novel insight into the microbiology of flocs and biofilms in global wastewater treatment systems** **Per Halkjær Nielsen, Aalborg University, Aalborg**
14:30-15:00	**Microbial reductive dechlorination of polychlorinated biphenyls in polluted urban rivers** **Shanquan Wang, Sun Yat-sen University, Guangzhou**
15:00-15:15	**Subsurface biofilm community assembly driven by microbial interaction** **Yichao Wu, Huazhong Agricultural University, Wuhan**
15:15-15:30	**Enhanced phenol biodegradation from industrial wastewater by resuscitation promoting factor (Rpf) under stressful conditions** **Faqian Sun, Zhejiang Normal University, Jinhua**
15:30-16:00	**Meet the speakers / Coffee break**
Session 4 **Chair**	**<Environmental Science and Ecotechnology> Special Session** **Yu Tao, Harbin Institute of Technology, Shenzhen**
16:00-16:30	**Charging memory effect of microbial communities in wastewater treatment systems** **Aijie Wang, Harbin University of Technology, Shenzhen**
16:30-16:45	**Microbiome Research of Activated Sludge Flocs and Biofilm in Wastewater Treatment Systems** **Feng Ju, Westlake University, Hangzhou**
16:45-17:00	**How emerging contaminants affect the dissemination and evolution of antimicrobial resistance genes?** **Shuhong Gao, Harbin University of Technology, Shenzhen**
17:00-17:15	**Low-carbon resource recovery technology based on extracellular biopolymers derived from granular sludges** **Cuijie Feng, Sun Yat-sen University, Zhuhai**
17:15-17:30	**<Environmental Science and Ecotechnology> Meet the editor** **Yu Tao, Harbin Institute of Technology, Shenzhen**
17:30-17:45	**Closing ceremony**

Oct 23rd Applied Microbiology

Venue: Nanhu Hall

Session 1	
Chair	**Shezmin Ismail, Monash University, Melbourne**
9:00-9:30	**Why do we have to apply engineered biofilms to ecosystems and the environment?** **Gamini Seneviratne, National Institute of Fundamental Studies, Kandy**
9:30-9:45	**Crude oil degrading microbial biofilms: a synthesis** **Madushika Perera, University of Colombo, Colombo**
9:45-10:00	**Soil carbon sequestration in lowland paddy cultivation: a Biofilm biofertilizer approach** **Sidath Ekanayake, National Institute of Fundamental Studies, Kandy**
10:00-10:15	**Biofilmed Azorhozobial biofertilizer to replace 50% urea requirement for rice (*Oryza sativa*)** **Thilini A. Perera, University of Colombo, Colombo**
10:15-10:30	**Synthetic Cyanobacteria / Hetrotroph Communities: Engineering in characteristics from biofilming species towards improved consortia robustness** **Danny Ducat, Michigan State University, East Lansing**
10:30-10:45	**Meet the speakers / Coffee break**
Session 2	
Chair	**Radha Prasanna, ICAR-Indian Agricultural Research Institute, Maharashtra**
10:45-11:15	**SPR detection in microbial biofilms** **Chii-Wann Lin, National Taiwan University, Taipei**
11:15-11:30	**Cellulolytic activity of fungal-bacterial biofilm developed from brown rot fungi and soil bacteria** **Amila P. Henagamage, Uva Wellassa University, Badulla**
11:30-11:45	**Microbial biofilms can shape gut microbiota better than diet-based interventions** **Mahesh Premarathna, National Institute of Fundamental Studies, Kandy**
11:45-12:00	**Development of Biofertilizers to Strawberries: a microbial biofilm approach** **Darshani Singhalage, Uva Wellassa University, Badulla**
12:00-14:00	**Meet the speakers 12:00-12:15 / Lunch 12:15-14:00**

Session 3	
Chair	**Gamini Seneviratne, National Institute of Fundamental Studies, Kandy**
14:00-14:30	**Fungal-bacterial biofilms: promises, progress and prospects** **Shezmin Ismail, Monash University, Melbourne**
14:30-14:45	**Prospecting cyanobacterium-based biofilms as climate-smart options under elevated CO_2 environments** **Radha Prasanna, ICAR-Indian Agricultural Research Institute, Maharashtra**
14:45-15:00	**Application of Cunninghamella elegans biofilms in drug metabolite production and pollution removal** **Cormac Murphy, University College Dublin, Dublin**
15:00-15:15	**Verification of Fermentation Time of Kombucha 'Tea Fungus'** **Viduranga Waisundara, Australian College of Business & Technology, Kandy**
15:15-15:30	**Meet the speakers / Coffee break**
Session 4	**Biofilms and synthetic biology**
Chair	**Yanrui Ye, South China University of Technology, Guangzhou** **Zhenbo Xu, South China University of Technology, Guangzhou**
15:30-15:45	**Metabolic engineering *Corynebacterium glutamicum* co-culture system to utilize lignocellulose hydrolysate for efficient production of α-carotene** **Cheng Li, Massachusetts Institute of Technology, Cambridge**
15:45-16:00	**Exploiting living materials by engineering Gram-positive pili** **Yuanyuan Huang, Shenzhen Institutes of Advanced Technology, Shenzhen**
16:00-16:15	**To be determined** **Xuejie Li, South China University of Technology, Guangzhou**
16:15-16:30	**Meet the speakers / Coffee break**

Asia-Pacific Biofilms 2024

October 22-27, 2024

Guangzhou, China


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South China University of Technology


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