



JSS
ACADEMY
OF HIGHER
EDUCATION
& RESEARCH
MYSURU

(DEEMED TO BE UNIVERSITY)

Special Interest Group

On



Biofilms in Clinical Settings and their Control

An Initiative
of
Research Division

JSS AHER, Mysuru-15.



Team Lead

Dr Jamuna Bai A

Assistant Professor

Department of Microbiology

School of Life Sciences.

JSS AHER, Mysuru

Started on 2019-20

JSS Academy of Higher Education & Research
(Deemed to be University)
Accredited "A*" Grade by NAAC



REG/ACA/SIG/BCSC/448/2020-21 / 3148

Date: 11.08.2020

NOTIFICATION

Sub: Constitution of Special Interest Group in "Biofilms in Clinical Settings and their Control".
Ref: Your request letter No. REG/FLS/GEN/2020-21/155 dated 14.07.2020.

Special Interest Group (SIG) – "Biofilms in Clinical Settings and their Control"

In exercise of powers conferred under Section 50 (xxii) and 12 [xi (a)] of the MoA/Rules of JSS Academy of Higher Education & Research as per UGC Regulations 2016, the Special Interest Group (SIG) in the area of "Biofilms in Clinical Settings and their Control" has been constituted for focusing on basic and applied research in the mentioned area with the following members:

Sl.No.	Name of the member	Remarks
1	Dr. Jamuna Bai A Assistant Professor Division of Microbiology Dept. of Water & Health (FLS) JSS AHER.	Group Leader
2	Dr. Sumana M N Professor, Dept. of Microbiology JSS Medical College.	Member
3	Dr. Asha Srinivasan Assistant Professor Division of Nanoscience & Technology Dept. of Water & Health, JSS AHER.	Member
4	Dr. Mahesh P. A Professor, Dept. of Respiratory Medicine JSS Medical College.	Member
5	Dr. Sindhu R Assistant Professor Division of Microbiology Dept. of Water & Health (FLS), JSS AHER.	Member
6	Dr. Durai Anand Kumar Assistant Professor, Dept. of Pharmaceutical Chemistry JSS College of Pharmacy, Mysuru.	Member
7	Dr. Shiva Prasad Assistant Professor, Dept. of Chemistry, Amrita Vishwa Vidyapeetham #114,7th cross, 114, Ring Rd, Bogadi 2nd Stage, Bhogadi, 570026.	Special Invitee

8	Dr. Ravishankar Rai V UGC BSR Faculty Fellow, Dept. of Studies in Microbiology University of Mysore.	Special Invitee
9	Dr. Ravindra P. V DBT Ramalingaswami Fellow, Dept. of Biochemistry Central Food Technological Research Institute (CFTRI), Cheluvamba Mansion, Valmiki Rd, opp. Railway Museum, Devaraja Mohalla, CFTRI Campus, Kajjihundi, Mysuru, Karnataka 570020.	Special Invitee

The SIG "Biofilms in Clinical Settings and their Control" shall function for a period of three years from the date of Notification.

The SIG shall submit their report once in six months to the JSS AHER. The budget for the functioning shall be submitted by the Group leader of the SIG and approval shall be obtained from the JSS AHER for carrying out their various activities.


REGISTRAR

To,

All the above members,

Copy to:

1. The Pro Chancellor, JSS AHER.
2. The Vice Chancellor, JSS AHER.
3. The Controller of Examinations, JSS AHER.
4. The Director (Academics), JSS AHER.
5. The Director (Research), JSS AHER.
6. The Dy. Registrar (Senior Grade), JSS AHER.
7. The Dy. Director (Academics), JSS AHER.
8. The Dy. Director (Authorities), JSS AHER.
9. The Associate Director (Research), JSS AHER.
10. The IQAC Coordinator, JSS AHER.
11. The Asst. Director (Academics), JSS AHER.
12. The Asst. Director (Research), JSS AHER.
13. The Principal, JSS Medical College.
14. The Principal, JSS Dental College & Hospital.
15. The Principal, JSS College of Pharmacy, Mysuru.
16. The Principal, JSS College of Pharmacy, Ooty.
17. The Head, Dept. of Water & Health (FLS), JSS AHER.
18. The Coordinator, Dept. of Health System Management Studies, JSS AHER.
19. Office Copy

Guidelines for the formation of Special Interest Groups:

Objective: To promote research in specific area by a group of individuals working in the constituent colleges of the JSS AHER, who are desirous of promoting research in a specific area through

- Continuous dialogue
- Conducting Group meetings
- Submitting research projects
- Development of new ideas in research in the identified area and translating the same into research proposals to external funding agencies and research publications in indexed journals.
- Translating research findings into the clinical applications
- Organizing seminars related to objectives of the Group.

The SIG should categorize their objectives as short term and long-term objectives and while submitting the progress reports, highlight their achievements under the same.

Structure: The SIG shall consist of 5-7 members with a group leader. They shall meet periodically and submit the report annually of the group activities and achievements.

The Special Interest Group shall function for a period of 3 years from the date of notification, which can be extended further, based on the outcomes and reviewed by the Board of Management of the JSSAHER.

Budget: The budget required for functioning of the SIG shall be allocated from Research and Development fund of the JSS AHER based on the budget prepared and submitted by them annually.

The budget shall be provided for following aspects.

- Meeting expenses of the Group.
- Short travels within India for the purpose of group objectives.
- Secretarial assistance as required by the Group.
- Preparation of research project proposals/reports.

The JSS AHER shall provide in its budget for the expenditure proposed by the Special Interest Groups and make the funds available to the respective group.

Evaluation of outcomes: The JSS AHER shall evaluate the SIG periodically in respect to their group objective examining the follows.

- Progress in the proposed research projects.
- Publication of research findings in periodicals and presentations
- Reports.

Name of the SIG: Biofilms in Clinical Settings and their Control

Approval Reference: REG/ACA/SIG/BCSC/448/2020-21 – Dated 11/08/2020

Name of the Team Leader: Dr. Jamuna Bai A

Members

Sl. No.	PI	Role
1.	Dr. Jamuna Bai A Asst Professor Dept. of Microbiology SLS, JSSAHER, Mysuru	Team Leader
2.	Dr. Mahesh PA, Professor, Department of Respiratory Medicine, JSS Medical College, JSS Academy of Higher Education & Research, Mysuru	Member
3.	Dr. Sumana MN, Professor, Medical Microbiology, JSS Medical College, JSS Academy of Higher Education & Research, Mysuru	Member
4.	Dr. Kartikeya Patil Prof & Head, Dept of Oral Medicine & Radiology, JSSDC, Mysuru	Member
5.	Dr. Asha Srinivasan, Assistant Professor, Division of Nanoscience & Technology, Faculty of Life Sciences, JSS Academy of Higher Education & Research, Mysuru	Member
6.	Dr. Sindhu R, Assistant Professor, Division of Microbiology, Faculty of Life Sciences. JSS Academy of Higher Education & Research, Mysuru	Member

Sl. No.	PI	Role
7.	Dr. Durai Anand Kumar, Assistant Professor, Dept. of Pharmaceutical Chemistry, JSS College of Pharmacy, Mysuru	Member
8.	Dr. Shiva Prasad, Assistant Professor, Dept. of Chemistry, Amrita Institute, Mysuru	External Member
9.	Dr. Ravishankar Rai V, UGC BSR Faculty Fellow, Department of Studies in Microbiology, University of Mysore, Mysuru	External Member
10.	Dr. Ravindra PV, DBT Ramalingaswami Fellow, Department of Biochemistry, CFTRI, Mysuru	External Member

Objectives

1. To develop and implement effective biofilm prevention strategies on medical devices/implants and surfaces.
2. Enhance methods for early and accurate detection of biofilms in clinical settings.
3. Optimize and innovate treatment approaches for biofilm-associated infections.

Activities Conducted

- International webinar on “Biofilms: Health Aspects and Control Measures” on 25 June 2021

The current pandemic has shown the relevance of investing in research on health care. The SIG on Biofilms in clinical settings is committed to working on novel strategies to overcome problems associated with AMR and biofilm formation in clinically relevant microbes. The discovery that most infectious bacteria attach and grow on exposed surfaces and exhibit a biofilm mode of growth has led to a paradigm shift in the way researchers study pathogens. The treatment of pathogens has to be reconsidered in the light of the understanding that microbes actually present themselves as biofilms in the environment. Significant progress has been made, but there is lot more to understand and do for developing effective treatments and in educating society about biofilms and their implications. With this concept, the webinar on Biofilms: Health Aspects and Control Measures was organized and it included three pertinent keynote talks emphasizing the role of microbial biofilms in clinical settings, food safety and oral healthcare.



Special Interest Group on Biofilms in Clinical Settings and their Control invites you to
International Webinar on Biofilms: Health Aspects and Control Measures
Friday, 25 June 2021, 09:30 AM – 1:30 PM

KEYNOTE SPEAKERS

		
Dr. Devendra Dusane Research Scientist Nationwide Children's Hospital, Ohio, United States	Dr. Vandan Nagar Scientific Officer Food Technology Division, Bhabha Atomic Research Centre, Mumbai, India	Dr. Veda Hegde Professor & Head Department of Oral Pathology, SDM College of Dental Sciences and Hospital, India

Speakers & topics covered



**Dr. Devendra Dusane,
Research Scientist,
Nationwide Children's Hospital,
Ohio, USA.**

The first Keynote address was delivered by Dr. Devendra Dusane, Research Scientist from Nationwide Children's Hospital in Ohio, USA. Dr. Dusane as a Postdoctoral Fellow at McGill University, Canada had carried out the pioneering work on application of natural compounds and phytochemicals to potentiate the efficacy of antibiotics and disperse bacterial biofilms. He has also served as a Scientific Consultant for one of the leading medical devices company (Biocomposites Limited) based in UK. He has received prestigious awards such as the Young Investigator Award from Center for Biofilm Engineering, USA; the Journal of Wound Care award for Biofilm research; International Society of Chemotherapy, Novartis Biotechnology Leadership Camp and other travel grants and recognitions for his work on biofilms. In his presentation on "Biofilms: from Bench to Bedside", Dr. Dusane provided crucial insights on orthopaedic infections and the role of biofilms in these infections. His talk focused on developing novel methods for detecting and strategies to inhibit / disperse bacterial biofilms associated with orthopedic and wound infections. He also gave an overview of the various biofilm related infections in humans, the causative agents and their impact on health. In his detailed presentation, he spoke about steps involved in bacterial attachment to surfaces, colonization and biofilm formation on medical implants, biomaterial and host surfaces. The talks also covered mechanism of antibiotic resistance conferred by the biofilm formation leading to severe infections.



**Dr. Vandan Nagar,
Scientific Officer-F,
Food Technology Division,
Bhabha Atomic Research Centre,
Mumbai.**

The second session was on role of biofilms in food safety and the keynote talk was delivered by the eminent scientist Dr. Vandan Nagar currently working as Scientific Officer-F in Food Technology Division, Bhabha Atomic Research Centre, Mumbai. Dr. Nagar is a MSc Gold medallist from Gujarat University. He has qualified Department of Biotechnology (D.B.T.) Govt. of India M.Sc. Biotechnology All India Entrance Test, CSIR-UGC-JRF NET fellowship and trained at Orientation Course (OCES) in Nuclear Science and Engineering, BARC. He is a recipient of International travel grants from Department of Science and Technology, India and CICS. Dr. Nagar was also awarded the prestigious Korea Atomic Energy Post-doctoral fellowship to work at KAERI, South Korea. Dr. Nagar has extensively worked on microbial safety and shelf-life extension of food products using gamma radiation, and characterization of food-borne pathogens. He presented his research work on “Understanding stress response of *Aeromonas* in food environment and its control”. Dr. Nagar gave an insightful talk on stress response, quorum sensing, virulence factor production and biofilm formation in *Aeromonas*, an emerging food-borne pathogen which is highly infectious in humans. The comprehensive talk also focused on radiation sensitivity of planktonic and biofilm-associated *Aeromonas* spp. on food and food-contact surfaces. He also highlighted the potential application and efficacy of bacteriophages as a novel tool to inhibit biofilm formation in *Aeromonas*. Following the talk, there was deliberations and discussion on commercial applications, safety and efficacy aspects of anti-biofilm intervention techniques in food systems.



**Dr. Veda Hegde,
Professor & Head of the Department of
Oral & Maxillofacial Pathology & Oral
Microbiology,
SDM College of Dental Sciences &
Hospital,
Dharwad**

The keynote speaker was Dr. Veda Hegde, Professor & Head of the Department of Oral & Maxillofacial Pathology & Oral Microbiology, SDM College of Dental Sciences & Hospital, Dharwad. Dr. Hegde is a proud alumunus of JSS Dental College & Hospital, Mysore. She pursued her MDS from Government Dental College, Bengaluru and secured 28th Rank in Karnataka state entrance examination. She has 16 years of academic and research experience with more than 25 publications in National & International Journals. She has published a book on Apoptosis in oral dysplastic lesions & oral squamous cell carcinoma. Dr. Veda Hegde's talk on "Oral Biofilms: Boon or Bane" was highly educative and informative as she emphasized on the implications of oral microbiota and their biofilms on quality of life, systemic health and economic costs. She enlightened the audience about the benefits of oral resident microbiota, effects of alteration in microbial homeostasis and role of biofilms in periodontal disease. She discussed with the panelists and attendees about the preventive measures to avoid oral caries and novel anti-biofilm strategies that could be adopted to control periodontal diseases.



A webinar on “Biofilms: Health Aspects and Control Measures” with keynote talks by Dr. Devendra Dusane, Dr. Vandanagar and Dr. Veda Hegde on 25 June 2021. Dr. Kushalappa P.A, Director (Academics) and Prof. K.A. Raveesha, Head, Department of Water and Health, Faculty of Life Sciences, JSS AHER presided over the event. Dr. Jamuna Bai A, Department of Microbiology, Dr. Asha S, Division of Nanotechnology, & Dr. Sindhu R, Dept. of Microbiology, FLS, JSS AHER organized the webinar.

International webinar on "Biofilms and control strategies" on 22nd February, 2023 from 02:00 PM to 04:30 PM.



Special Interest Group on Biofilms in Clinical Settings and their Control invites you to **International Webinar on Biofilms and Control Strategies** Wednesday, 22 February 2023, 02:00 PM – 04:30 PM

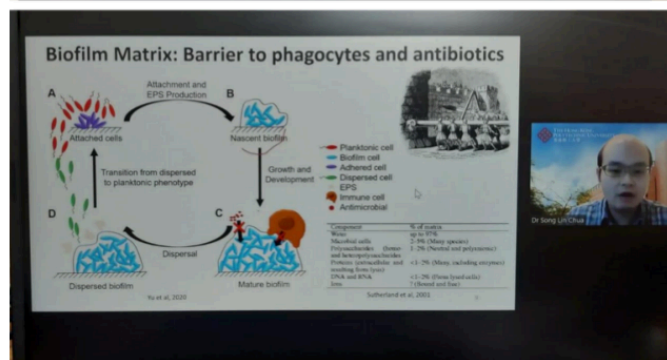
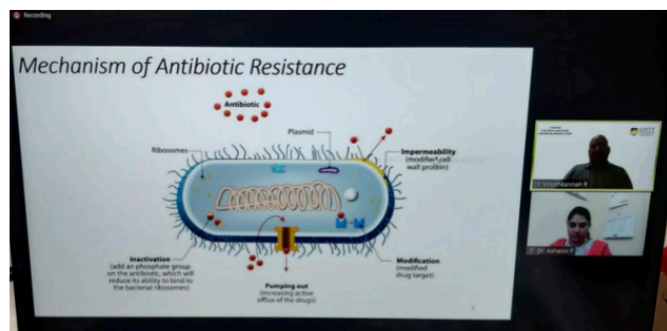
INVITED SPEAKERS



Dr. Vinothkannan Ravichandran
Assistant Professor
Center for Drug Discovery and Development
Amity Institute of Biotechnology,
Amity University, Mumbai, India



Dr. Song Lin Chua
Assistant Professor
Department of Applied Biology and Chemical Technology
Hong Kong Polytechnic University,
Hong Kong (SAR China)



Speakers & topics covered



Dr. Song Lin Chua
Assistant Professor
Department of Applied Biology and
Chemical Technology
The Hong Kong Polytechnic University.

Dr. Song delivered a talk on “Breaking the great wall of biofilm infection”. He holds a Bachelor of Science in Biomedical Sciences from Nanyang Technological University and a Ph.D. from the National University of Singapore. His research focuses on microbial biofilms, including their physiology, interactions with hosts and environments, and control strategies. He is also involved in biofilm engineering for resource recovery and bioremediation.

Patents:

Chua SL, Fang JKH, Liu SY. 2021. Microbial-based method that accumulate and release plastic particles for recovery, 63/275,022; Chua SL, Khoo BL, Liu SY. 2021. Microfluidic Platform for Infection Models. US Patent Pending, 63/201,348; Chua SL, Khoo B. L. & Liao, J. 2021, Microfluidics for label-free detection of pathogen-infected phagocytes. US Patent Pending, 63/150,716; Chua SL, Khoo B. L. & Deng, Y., 2020. Microfluidic Device and Method of Preparing A Cell Model for Disease Associated with Cancer. US Patent Pending, 63/091,449



Dr. Vinothkannan R,
Assistant Professor & In-Charge
Center for Drug Discovery and
Development
Amity Institute of Biotechnology,
Amity University,
Mumbai, India

Dr. Vinothkannan delivered a talk on “Drug designing against biofilms”. Dr. Vinothkannan Ravichandran is an Assistant Professor at the Amity Institute of Biotechnology in Mumbai. He holds a Ph.D. in Biotechnology and a Master of Science in Biochemistry. His research interests include antimicrobial resistance, bacterial quorum sensing, anti-biofilm agents, efflux pumps, drug designing, and drug repurposing.

He has also been involved in various professional activities, such as reviewing for several scientific journals and being a member of the Association of Microbiologists of India. Additionally, he has received grants like the China Postdoctoral Science Foundation Grant in 2015 & DST SERB ECR in 2021 and participated in the Shandong University Postdoctoral International Exchange Program in 2019.

Collaborations

Collaborators	Areas of research
Prof. Ponnadurai Ramasami, University of Mauritius, Mauritius	Designing biofilm inhibitors based on computational chemistry
Dr. Aiko Hasegawa, Shinshu University School of Medicine, Japan	Studying biofilms in solid tumors
Dr. Song Lin Chua, Hong Kong Polytechnic University, Hong Kong	Developing in vitro and in vivo models to study biofilms
Dr. Vinnothkannan R Center for Drug Discovery and Development Amity Institute of Biotechnology, Amity University, Mumbai, India	Developing efflux pump & QS based biofilm inhibitors



Projects and Patents

Completed Projects:

Interstellar Initiative Grant from New York Academy of Sciences, USA & AMED, Japan (15 Lakhs): Microbiome dysbiosis in lung cancer and implications in CAR-T therapy (August 2021 – July 2023).

Outcomes

- Characterization of microbiome associated with lung cancer (NSLC)
- Elucidation of TME modulating behavior of tumor associated microbes
- Development of spheroids & 2D cultures for studying tumor biofilm interactions.
- Applied for HFSP funding agency.

Ongoing Projects

1. Interstellar Initiative Beyond Grant from New York Academy of Sciences, USA & AMED, Japan (15 Lakhs): Microbiome dysbiosis in lung cancer and implications in CAR-T therapy (September 2023 - Ongoing).

Objectives:

- Characterize the microbial biofilms in lung cancer tissues and correlate their composition with CAR-T therapy outcomes.
- Investigate how biofilms modulate the immune environment and CAR-T cell behavior, including cytokine production and immune checkpoint interactions.
- Develop and evaluate methods for targeting or disrupting biofilms in combination with CAR-T therapy, such as using biofilm-disrupting agents or modifying CAR-T cell protocols.

2. UGC Start-up Research Grant (10 Lakhs): Bioactive compounds from microbes as efflux pump inhibitors against ESKAPE pathogens (March 2023 - Ongoing).

Objectives:

- High-throughput screening of microbial extracts to identify compounds that inhibit efflux pumps in ESKAPE pathogens.
- Investigate the impact of these compounds on efflux pump expression and function, using techniques such as gene expression analysis and efflux assays.

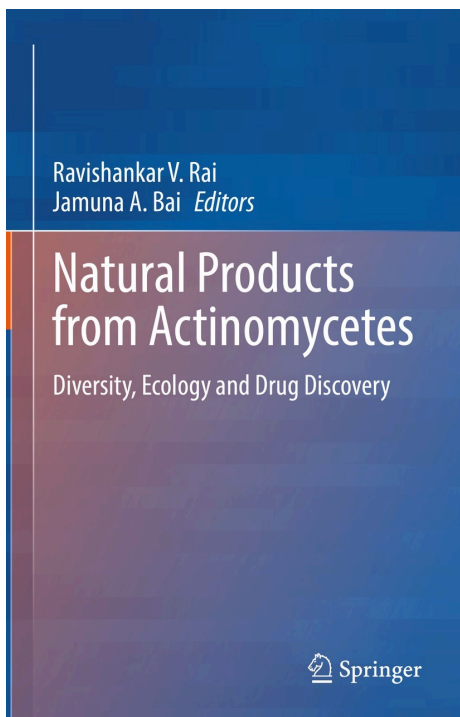
Conduct preclinical studies to evaluate the safety, efficacy, and pharmacokinetics of the formulations in relevant models, aiming to translate findings into potential clinical applications

Achievements

Publications (Research articles/ Reviews/ Chapters)

- Bogadi S, Rao P, KU V, Kuppusamy G, Madhunapantula SV, Subramaniyan V, Satyanarayana Reddy Karri VV, Aswathanarayan JB. Management of biofilm-associated infections in diabetic wounds—from bench to bedside. *Pure and Applied Chemistry*. 2024 May 14(0).
- Aswathanarayan JB, Vittal RR. Small molecules as next generation biofilm inhibitors and anti-infective agents. *Physical Sciences Reviews*. 2023 Nov 20;8(11):4361-73.
- Siddharth S, Aswathanarayan JB, Kuruburu MG, Madhunapantula SR, Vittal RR. Diketopiperazine derivative from marine actinomycetes *Nocardiosis* sp. SCA30 with antimicrobial activity against MRSA. *Archives of Microbiology*. 2021 Dec;203:6173-81.
- Aswathanarayan JB, Madhunapantula SV, Vittal RR. MXene-Based Polymer Composites for Various Biomedical Applications. *MXene Reinforced Polymer Composites: Fabrication, Characterization and Applications*. 2024 Feb 20:423-57.
- Aswathanarayan JB, Rao P, HM S, G Sowmya, Rai RV. Biofilm-associated infections in chronic wounds and their management. In *Advances in Microbiology, Infectious Diseases and Public Health: Volume 17* 2022 Oct 18 (pp. 55-75). Cham: Springer International Publishing.

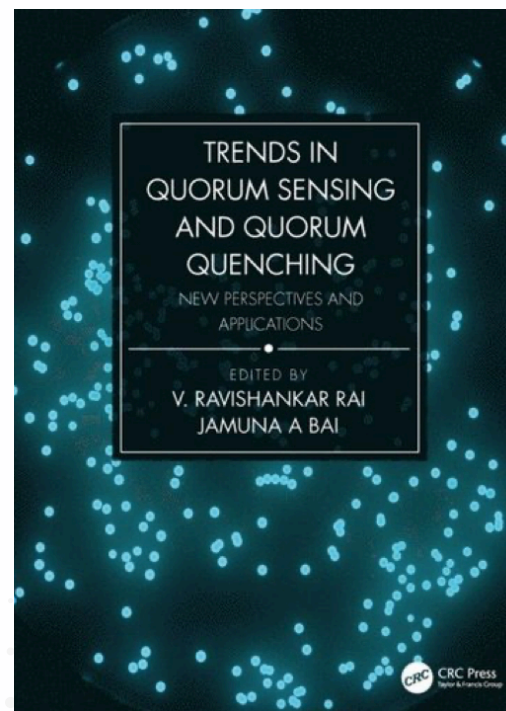
- Webster G, Mullins AJ, Cunningham-Oakes E, Renganathan A, Aswathanarayan JB, Mahenthalingam E, Vittal RR. Culturable diversity of bacterial endophytes associated with medicinal plants of the Western Ghats, India. *FEMS Microbiology Ecology*. 2020 Sep;96(9):fiaa147.
- Chatterjee B, Aswathanarayan JB, Vittal RR. Application of geraniol–chitosan blend film with quorum sensing inhibitory activity as packaging materials for biofilm control in fresh fruit and vegetable. *Journal of Packaging Technology and Research*. 2022 Jul;6(2):101-14.
- Nagar N, Aswathanarayan JB, Vittal RR. Anti-quorum sensing and biofilm inhibitory activity of *Apium graveolens* L. oleoresin. *Journal of Food Science and Technology*. 2020 Jul;57:2414-22.
- Bai JA, Rai VR. Nanomaterials as Quorum Sensing Inhibitors. *Trends in Quorum Sensing and Quorum Quenching*. 2020 May 4:243-56.



Natural Products from Actinomycetes

Diversity, Ecology and Drug Discovery

Book | © 2022



Trends in Quorum Sensing and Quorum Quenching E-book

New Perspectives and Applications

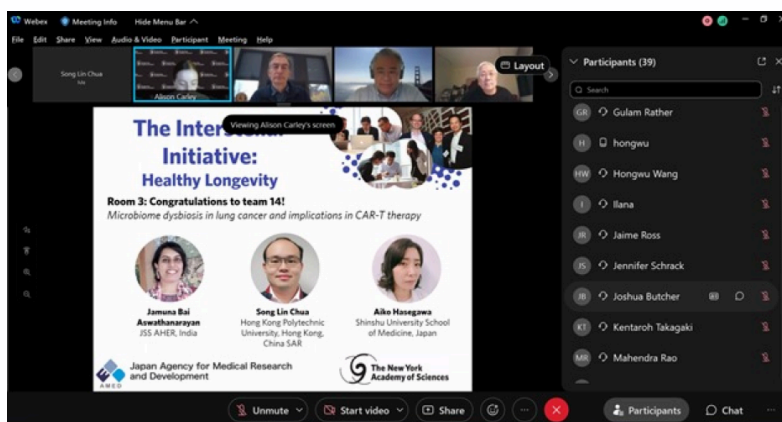
by V Ravishankar Rai, Jamuna A Bai

E-BOOK (LCP), English, 2020-05-04

<https://doi.org/10.1201/9780429274817>

Awards and Recognitions

Best Team Presentations - Interstellar Initiative Early career Investigator Award for September 2021 and February 2022 workshops



Faculty involvement

Delivered a talk and chaired a session in 4th International BMSseCON 2023 on 14th & 15th 2023

PROGRAMME SCHEDULE ON DAY 3 - 15.12.2023 (Friday)		
Time	Resource person	Scientific Talk
9.00 AM - 9.45 AM	 Dr. Sumit Bhattacharya Senior Research scientist, Jessi Brown VA Medical Center, Chicago, IL 60612	Role of chondroitin sulfate in the pathophysiology of COVID-19 induced respiratory Failure and Lung fibrosis
9.45 AM - 10.30 AM	 Dr. Suresh PS Associate Professor School of Biotechnology National Institute of Technology, Calicut	Study of phosphatase-estradiol receptor and non-coding RNA interaction in breast cancer
10.30 AM - 11.15 AM	 Dr. Sukanya Gangopadhyay Associate Professor, Dept. of Biochemistry, Vardhman Mahavir Medical College & Safdarjung Hospital, NewDelhi	Trans fats and Neurochemistry: The Biochemist's Prescription
11.15 AM - 11.30 AM	TEA BREAK	
11.30 AM - 12.15 PM	 Dr. Jamuna Aswathanarayan Assistant Professor, Dept of Microbiology, JSS Academy of Higher Education & Research, Mysore, India	Application of Organoids in Biomedical Research
12.15 PM - 1.00 PM	 Dr. Rajasekaran Ramalingam Professor, Dept. of Integrative Biology, Vellore Institute of Technology (VIT), Vellore, India	Bioinformatics for Medical Biology
2.00 PM - 4.30 PM	Presentation for Young research scholar award (UG students) and regular oral presentation for Faculty	
4.30 PM - 5.00 PM	VALEDICTORY FUNCTION	

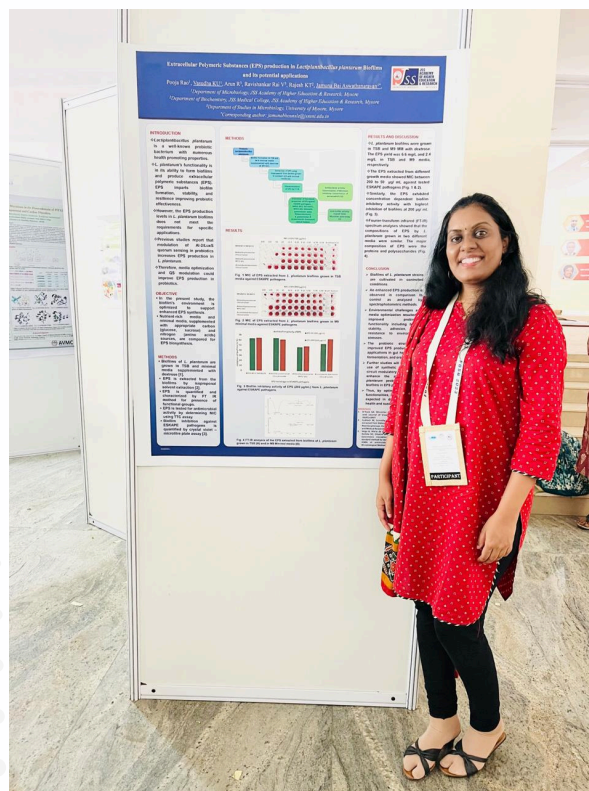
**4th INTERNATIONAL
e-CONFERENCE BMSseCON 2023**



Delivered a Guest Lecture on “Quorum sensing & biofilms in pathogens” at University of Mysore on 06/03/2023



Presented a poster on “**EPS as biofilm inhibitors in ESKAPE pathogens**” at International Conference & Startup Summit on Functional Biomaterials & Synthetic Biology, PGS Institute of Advanced Studies (31/08/2023 to 02/09/2023).



Invited for The Global Bioimaging meet & Exchange of Experience in Stellenbosch University and University of Cape Town, South Africa from 25th to 31st October 2023. Biofilm studies can be advanced by using cutting-edge imaging technologies and methodologies including CLSM and Cryo EM. The event facilitates collaboration among researchers to address challenges and enhance biomedical research.



Caron Jacobs, PhD.
Chan Zuckerberg Initiative Imaging Scientist
IDM Microscopy platform,
Wellcome-CIDRI Africa & Institute for Infectious Disease
& Molecular Medicine,
Faculty of Health Sciences, University of Cape Town,
Cape Town, South Africa
Email: caron.jacobs@uct.ac.za
Phone: (+27) 0664078846

26 September 2023

To whom it may concern,

Letter of invitation: Global Bioimaging Exchange of Experience Conference Stellenbosch, South Africa, 25-27 October 2023.

This letter confirms that the following individual is invited to attend two consecutive academic meetings, (i) the *Global Bioimaging Exchange of Experience Conference*, from 25-27 October 2023, to be held at the Protea Hotel Stellenbosch Hotel and Conference Venue in Western Cape, South Africa and (ii) the *Global Bioimaging Facility Management Workshop*, from 29-31 October 2023, to be held at the University of Cape Town in Western Cape, South Africa.

Name: **Jamuna Bai Aswathanarayan**
Passport number: **Z7004584** Nationality: **Indian**
Role: **Assistant Professor**
Organisation: **JSS Academy of Higher Education & Research**
Address: **JSS Medical Institutions Campus, Sri Shivarathreeshwara Nagara,
Mysuru, Karnataka 570015**
Country: **India**



Student Involvement – PhD Scholars Presentation

Ms. Pooja Rao (Reg No. 21PLM026) – PhD focus area “Molecular mechanism of biofilm formation in VAP isolates *Klebsiella pneumoniae* & *Acinetobacter baumannii*”

Sl. No	Conference/ Workshop attended with organising body	Poster/Paper presented
1.	International Conference on Novel Paradigms in Biotechnology-Bioengineering Interface- from Concepts to Reality (NPBBI-201-22) organised by Sathyabama Institute of Science and Technology, in association with California University of science and medicine, USA and Indian Association of Applied Microbiologists (IAAM) – 10th & 11th Nov 2020	Poster title "Ampicillin resistance in <i>Klebsiella pneumoniae</i> clinical isolates"
2.	International Conference on 'Sustainable Utilization of Bioresources' (ICSUB 2022), organised by Department of Botany, University of Kerala, Karyavattom, Thiruvananthapuram, Kerala, India – 10th to 15th Jan 2022	Oral presentation title "Antimicrobial activity of Diketopiperazines against clinical isolates of <i>Klebsiella pneumoniae</i> "
3.	International Conference on Emerging Trends in Biological Sciences (ICETBS 2022)" organized by Department of Biological Sciences, P. D. Patel Institute of Applied Sciences, CHARUSAT – 9th to 11th Jan 2022	Poster Title "Tracking antibiotic resistance in community acquired and nosocomial <i>Klebsiella pneumoniae</i> infections"

Student Involvement

PhD Scholars Presentation

Ms. Pooja Rao (Reg No. 21PLM026) – PhD focus area “Molecular mechanism of biofilm formation in VAP isolates *Klebsiella pneumoniae* & *Acinetobacter baumannii*”

Sl. No	Conference/ Workshop attended with organising body	Poster/Paper presented
4.	“Virtual Conference on Chemistry and its Applications 2022”. Conducted by University of Mauritius, Faculty of Science, Department of Chemistry, Computational Chemistry Group – 08th to 12th Aug 2022	Poster Title "Biofilm inhibitory activity of diketopiperazine derivatives in carbapenem resistant <i>Klebsiella pneumoniae</i> "
5	2-day National Symposium on “Translation Research and Future Pharmaceuticals”, Organised by JSS College of Pharmacy, Ooty – 4th to 5th Nov 2022 Mysuru	Poster title " Essential oil based hydrogels with antimicrobial, anti-biofilm and anti-inflammatory properties as potential wound dressings"
6	4th international e- conference on “Beyond Boundaries: Exploring Excellence in Basic Medical Sciences” Organized by the Departments of Anatomy, Biochemistry, Physiology and Center of Biomedical Research, AVMCH, Puducherry, India. – 13th to 15th Dec 2023	Oral presentation title "Exploring the antibacterial and anti biofilm efficacy of natural compounds against nosocomial pathogens"

Sl.No	Conference/ Workshop attended with organising body	Poster/Paper presented
7.	“Virtual Conference on Chemistry and its Applications. Transforming chemistry and interdisciplinary research to innovation”. Organised by University of Mauritius, Faculty of Science, Department of Chemistry, Computational Chemistry Group – 12th to 16th Aug 2024	Oral presentation title "Anti-infective and biofilm inhibitory activity of usnic acid against ESKAPE pathogens"

Student Involvement – PhD Scholars Presentation

Ms. Vasudha KU (Reg No. 23PLM044) – PhD focus area
“Characterization of Biofilms in Solid Tumors”

Sl.No	Conference/ Workshop attended with organising body	Poster/Paper presented
1.	International Conference on "Functional biomaterials and Synthetic biology" held in PSGIAS, Coimbatore – 31 Aug 2023 to 01 Sep 2023	Extracellular Polymeric Substances (EPS) production in <i>Lactiplantibacillus plantarum</i> biofilms and its potential applications
2.	International Conference on "Genetics and Epigenetics of Cancer" organised by Department of Biochemistry, School of Life Sciences, Mysuru – 30 Oct 2023 to 31 Oct 2023	Computational studies on microbial metabolites as epigenetic modulators and methyl transferase inhibitors in Colorectal cancer.

Future Plans

Upcoming Events

Category	Activities	Details
Research and Knowledge Sharing	<ul style="list-style-type: none"> - Webinars and Workshops - Guest Speakers - Journal Club 	<ul style="list-style-type: none"> - Regular sessions on recent research and advancements. - Presentations by experts. - Review of recent scientific literature.
Collaboration and Networking	<ul style="list-style-type: none"> - Collaborative Projects - Networking Events 	<ul style="list-style-type: none"> - Initiate joint research projects. - Host events to connect members and facilitate partnerships.
Education and Training	<ul style="list-style-type: none"> - Training Programs - Certification Courses 	<ul style="list-style-type: none"> - Develop programs for healthcare professionals. - Create certification modules to enhance skills.
Advocacy and Policy	<ul style="list-style-type: none"> - Policy Briefs - Public Awareness Campaigns 	<ul style="list-style-type: none"> - Prepare briefs to advocate for better practices and funding. - Launch campaigns to raise awareness.
Technology and Innovation	<ul style="list-style-type: none"> - Innovation Challenges - Technology Demos 	<ul style="list-style-type: none"> - Organize challenges to develop new technologies. - Demonstrate new tools and technologies.
Resource Development	<ul style="list-style-type: none"> - Guidelines and Protocols - Resource Repository 	<ul style="list-style-type: none"> - Develop and update best practice guidelines. - Create an online repository of resources.
Annual Conferences	<ul style="list-style-type: none"> - SIG Conference 	<ul style="list-style-type: none"> - Plan and host an annual conference with keynote speakers and poster sessions.

Long Term Goals

The long-term goals of the Special Interest Group (SIG) on Biofilms in Clinical Settings and their Control focus on advancing both fundamental understanding and practical solutions for biofilm-related challenges in healthcare.

Goal	Objective	Approach
Advance Fundamental Understanding	Enhance scientific knowledge of biofilm formation, structure, and behavior in clinical settings.	Support research into molecular mechanisms, host-pathogen interactions, and influencing factors.
Develop and Implement Prevention Strategies	Establish comprehensive strategies for preventing biofilm formation on medical devices and surfaces.	Advocate for advanced antimicrobial coatings, surface modifications, and infection control protocols.
Innovate Detection and Diagnostic Methods	Improve early detection and accurate diagnosis of biofilm-associated infections.	Foster development of novel imaging techniques, molecular assays, and diagnostic tools.
Enhance Treatment and Management Approaches	Optimize treatment strategies for biofilm-related infections to improve patient outcomes.	Promote research into new therapeutic agents, combination therapies, and biofilm-disrupting treatments.
Foster Collaboration and Knowledge Dissemination	Build a network of researchers, clinicians, and industry professionals to advance biofilm research.	Organize conferences, workshops, and collaborative projects. Facilitate knowledge exchange through publications and reports.

Long Term Goals:

Year	Goal	Objective	Approach
Year 1	Advance Fundamental Understanding	Enhance scientific knowledge of biofilm formation, structure, and behavior.	Initiate foundational research, support basic studies on biofilm mechanisms, and start collaborations.
Year 2	Develop and Implement Prevention Strategies	Establish strategies for preventing biofilm formation on medical devices and surfaces.	Develop and test antimicrobial coatings, introduce surface modification technologies, and refine protocols.
Year 3	Innovate Detection and Diagnostic Methods	Improve detection and diagnosis of biofilm-associated infections.	Invest in novel imaging techniques, develop molecular assays, and validate diagnostic tools.
Year 4	Enhance Treatment and Management Approaches	Optimize treatment strategies for biofilm-related infections.	Research new therapies, test combination treatments, and develop guidelines for clinical applications.
Year 5	Foster Collaboration and Knowledge Dissemination	Build a network and disseminate knowledge to advance biofilm research and clinical practice.	Organize conferences, workshops, publish findings, and facilitate knowledge exchange and collaborations.

Summary

- The Special Interest Group (SIG) on Biofilms in Clinical Settings and their Control plays a crucial role in advancing our understanding of biofilms and their impact on patient health.
- By focusing on biofilm-related infections and resistance mechanisms, the SIG facilitates the development of targeted strategies for prevention, detection, and treatment.
- The work helps bridge gaps between research and clinical practice, leading to improved patient outcomes through innovative solutions and best practices.
- The SIG also promotes collaboration among researchers, clinicians, and industry professionals, accelerating the translation of scientific discoveries into practical applications.
- Overall, these efforts are vital for addressing the complex challenges posed by biofilms in healthcare environments.