Gopu SRIRAM

Assistant Professor (tenure-track), Faculty of Dentistry, National University of Singapore
National University Center for Oral Health Singapore (NUCOHS)
9 Lower Kent Ridge Road, Singapore 119085.
Email: sriram@nus.edu.sg || Tel: (65) 6772 6838
Research Index Profiles: Scopus || Web of Science || Google Scholar || ORCID

Current Position and Career History

- Asst. Professor (Tenure-track), Oral Sciences, Faculty of Dentistry, National University of Singapore (Apr 2017 -)
- Thrust Co-Lead, Dental and Craniofacial Applications, Centre for Additive Manufacturing (AM.NUS) (Oct 2020 -)
- Faculty (Courtesy Appt), Dept. of Biomedical Engineering, College of Design & Engineering, NUS (Jul 2023 -)
- Research Fellow, Institute of Medical Biology, A*STAR, Singapore (2014-2017)
- Senior Lecturer, Dept. of Oral and Maxillofacial Pathology, Meenakshi Ammal Dental College, India (2006-2010)
- Chief Dental Surgeon & Oral Pathologist, Tooth n Gums Dental Specialty Clinic, India (2005-2009)

Technopreneurship & Startups

- Co-Founder & Scientific Advisor, *REVIVO BioSystems*

Research Interests

- Development, application and convergence of microfluidics (organ-on-chip), 3D culture, and 3D (bio)printing-based microfabrication and biofabrication technologies for host-material & host-microbe interaction in dental, oral and craniofacial applications.
- Multiscale oral and craniofacial tissue regeneration using next-generation enabling technologies
- Animal alternatives in biomedical research
- Label-free, non-invasive imaging.

Teaching Areas

- Oral Biology and Pathology; Tissue Engineering and Regeneration; Biofabrication

Professional Qualifications

- *2017:* Post-Doc, Institute of Medical Biology, Agency for Science, Technology & Research (A*STAR), Singapore *(Domain: Experimental Dermatology & Microfluidics)*.
- *2014:* PhD, National University of Singapore, Singapore *(Domain: Stem Cells & Tissue Engineering)*.
- *2005:* MDS, University of Mumbai, India *(Domain: Oral Pathology & Bacteriology)*.
- *2001:* BDS, Tamil Nadu Dr. MGR Medical University, India.

Honors/ Awards

- Faculty Teaching Excellence Award (FTEA) AY2021-2022
- NUS Annual Teaching Excellence Award (ATEA) 2021
- Faculty Teaching Excellence Award (FTEA) AY2019-2020
- IADR-SEA Divisional Research Category Award (Basic Science Research) 2020 (IADR-SEA, Thailand, 2020)
- Global 3Rs Award (AAALAC International, USA, 2018)
- Lee Foundation Travel Award (Singapore, 2013)
- EMBL Corporate Partnership Registration Fee Fellowship (Germany, 2013)
- President's Graduate Fellowship (Singapore, 2012-2014)
- NUS Research Scholarship (Singapore, 2010-2012)

Honors/ Awards to Advisees

- AAPD Graduate Student Research Award (MDS resident: Ishreen Dhillon)
- IADR Kulzer Award 2023 (PhD candidate: Apurva Mishra)
- IADR-SEA Hatton Award 2022 (Senior) (PhD candidate: Hardik Makkar)
- IADR-DAR Septodont Young Investigator Prize for Innovation (PhD candidate: Muniraj Giridharan)
- ISSCR 2020 Travel Award and ISSCR 2020 Merit Award (PhD candidate: Sathya Kannan)

Editorial/Review Experience

- Reviewer for over 30+ journals in the fields of Microfluidics, Biofabrication, Tissue Engineering/Regeneration, Biomaterials, and Dentistry (More info: WoS profile C-6508-2013).
- Key/Top-tier journals actively review: Acta Biomaterialia, ACS group, Advanced Healthcare Materials, Advanced Materials, Biofabrication, Biomaterials Science, Bioprinting, Lab on Chip, Journal of Dental Research, J Periodontology, J Tissue Engineering
- Outstanding Reviewer for Biomaterials Science in 2021 (Link)

- Editorial Board Member: Microbes & Immunity (2023 -)
- Guest/ Review Editor: Frontiers in Cell and Developmental Biology (2022-), Frontiers in Dental Medicine (2020-), Biosensors (2020-)
- Associate Editor & Board Member: Indian Journal of Dental Research (2009-2010), Journal of Forensic Dental Sciences (2009-2010), Journal of Forensic Odontology (2008), Journal of Oral and Maxillofacial Pathology (2007-2009)
- Grant reviewer: A*STAR

***Full List of Publications**: Scopus; Google Scholar*

Recent Key Publications *(* Corresponding author)*

- Microphysiological Modeling of Gingival Tissues and Host-Material Interactions Using Gingiva-on-Chip. Muniraj G, Tan RHS, Dai Y, Wu R, Alberti M, **Sriram G***. ***Advanced Healthcare Materials*** 2023; e2301472.
- Fluid flow-induced modulation of viability and osteodifferentiation of periodontal ligament stem cell spheroids-on-chip. Mishra A, Kai R, Atkuru S, Dai Y, Piccinini F, Preshaw PM, **Sriram G***. ***Biomater Sci*** 2023.
- Modeling periodontal host-microbe interactions using vascularized gingival connective tissue equivalents. Makkar H, Lim CT, Tan KS, **Sriram G***. ***Biofabrication*** 2023, 15(4), 045008.
- Modeling crevicular fluid flow and host-oral microbiome interactions in a Gingival Crevice-on-Chip. Makkar H, Zhou Y, Tan KS, Lim CT, **Sriram G***. ***Advanced Healthcare Materials*** 2023; 12(6): e2202376.
- Characterization of silver diamine fluoride cytotoxicity using microfluidic tooth-on-a-chip and gingival equivalents. Hu S, Muniraj G, Mishra A, Hong K, Lum JL, Hong CHL, Rosa V, **Sriram G***. ***Dental Materials*** 2022; 38 (8), 1385-1394.
- Differential immune responses of 3D gingival and periodontal connective tissue equivalents to microbial colonization. Makkar H, Atkuru S, Tang YL, Sethi T, Lim CT, Tan KS, **Sriram G***. ***Journal of Tissue Engineering*** 2022; 13: 20417314221111650.
- A critical analysis of research methods and biological experimental models to study pulp regeneration. Rosa V, **Sriram G**, McDonald N, Cavalcanti BN*. ***International Endodontic Journal*** 2022; 55 Suppl 2:446-455.
- Two-Photon Fluorescence Microscopy and Applications in Angiogenesis and Related Molecular Events. Lee M, Kannan S, Muniraj G, Rosa V, Lu WF, Fuh JYH, **Sriram G***, Cao T*. ***Tissue Engineering Part B Reviews***. 2022;28(4):926-937.
- Cellular ageing of oral fibroblasts differentially modulates extracellular matrix organization. Atkuru S, Muniraj G, Sudhaharan T, Chiam KH, Wright GD, **Sriram G***. ***J Periodontal Research*** 2021;56:108–120.
- 3D bioprinting and microscale organization of vascularized tissue constructs using collagen-based bioink. Muthusamy S, Kannan S, Lee M, Sanjairaj V, Lu WF, Fuh JYH, **Sriram G***, Cao T*. ***Biotechnology Bioengineering*** 2021;118(8):3150-3163.
- Fabrication of vascularized tissue constructs under chemically defined culture conditions. **Sriram G***, Handral HK, Gan SU, Islam I, Rufaihah AJ, Cao T*. ***Biofabrication*** 2020;12(4):045015.
- Multiphoton Microscopy for Noninvasive and Label-Free Imaging of Human Skin and Oral Mucosa Equivalents. **Sriram G***, Sudhaharan T, Wright GD. ***Methods in Molecular Biology*** 2020;2150:195-212.
- Full-thickness human skin-on-chip with enhanced epidermal morphogenesis and barrier function. **Sriram G*****, Alberti M*****, Dancik Y, Wu B, Wu R, Feng ZJ, Ramasamy S, Bigliardi PL*****, Bigliardi-Qi M, Wang Z*****. ***Materials Today*** 2018; 21(4):326-340.
- Multi-chamber microfluidic platform for high-precision skin permeation testing. Alberti M, Dancik Y, **Sriram G**, Wu B, Teo YL, Feng Z, Bigliardi-Qi M, Wu RG, Wang ZP, Bigliardi PL. ***Lab Chip***. 2017;17(9):1625-1634.
- Fibroblast heterogeneity and its implications for engineering organotypic skin models in vitro. **Sriram G**, Bigliardi PL, Bigliardi-Qi M. ***European Journal of Cell Biology***. 2015;94(11):483-51.

Patents/ Technology Disclosures

- Gingival Tissues and Methods of Preparation Thereof (PCP10202006843S; Filed Jul 2020; PCT/SG2021/050418; US Patent Appl. 18/016,570) (Status: *Licensed*)
- Collagen-Based Bioink For Generation of Vascularized Tissue Constructs (PCP10202005647Q; Filed Jun 2020; PCT/SG2021/050346)
- Integrated Microfluidic System For Culturing And Testing. WO/2018/030958 (Status: *Licensed; US Patent granted-US11566212B2*)
- Vascularized Tissue, Skin or Mucosa Equivalent. WO/2016/209166 A1.