

SUNG CHOI, SM, PhD RECEIVES NIH K99 AWARD



Dr. Sung Choi, instructor in Oral Health Policy and Epidemiology, received a K99 award from the National Institute of Minority Health and Disparities entitled, **“Reducing Oral Health Disparities in Children Using Predictive Analytics and Mathematical Modeling.”**

For this project, Dr. Choi will investigate the influence of race/ethnicity on progression of dental caries, identify modifiable structural risk factors of disparities in quality of dental care, and assess the cost-effectiveness and value of dental care, incorporating racial/ethnic disparities in the assessment of value. Findings from this project are expected to inform multilevel interventions and support evidence-based policymaking by identifying targets resulting in high-value care in the US.

Dr. Choi's primary mentor for her K99 project is Dr. Sharon-Lise Normand, professor of Health Care Policy in the Department of Health Care Policy at Harvard Medical School and in the Department of Biostatistics at the Harvard Chan School of Public Health. Dr. Choi holds a master's degree in biostatistics from Harvard University and a PhD in management science and engineering (health policy) from Stanford University. Her methodological interests include integrating data science and operations research methods to inform health decision-making.

DAVID T. WU, DMD, DMSc23 RECEIVES OSTEOLOGY FOUNDATION AWARD



David T. Wu, DMSc 23, Advanced Graduate Education student in Periodontology, received the Young Researcher Grant from the Osteology Foundation for his project **“Hydrogels with Tunable Stress Relaxation Control Fusion of MSC Spheroids for Bone Formation.”**

Dr. Wu is currently working with co-investigators, David J. Mooney, Robert P. Pinkas Family Professor of Bioengineering and Dr. Mani Diba, postdoctoral fellow in the Mooney Laboratory for Cell and Tissue Engineering at the Harvard John A. Paulson School of Engineering and Applied Sciences.

The study aims to uncover the role of matrix viscoelasticity, a key mechanical cue guiding cell behavior, on the migration of mesenchymal stem cells (MSC) and fusion of MSC spheroids for bone tissue formation. The findings of this study will help understand the migration of cells that naturally occurs following tissue injury, and define a key biomaterial design parameter that can be applied to direct spheroid and organoid behavior for in vitro tissue models development as well as in vivo therapies to promote the regeneration of dental, oral, and craniofacial (DOC) tissues.

PUBLICATIONS

DEVELOPMENTAL BIOLOGY

Giddon D, Deutsch C, Moelle D, Hegazi F. Guest Editorial: The role of dental practitioners in treating PTSD patients. *Quintessence International* 2022;53(2):109-110.

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Muthuirulan P, Zhao D, Young M, Richard D, Liu Z, Emami A, Portilla G, Hosseinzadeh S, Cao J, Maridas D, Sedlak M, Menghini D, Cheng L, Li L, Ding X, Ding Y, Rosen V, Kiapour A, Capellini T. Author Correction: Joint disease-specificity at the regulatory base-pair level. *Nature Communications* 2022;13(1):631.

Nwadiugwu M, Monteiro N. Applied genomics for identification of virulent biothreats and for disease outbreak surveillance. *Postgraduate Medicine Journal* 2022; Jan 12.

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ORAL MEDICINE, INFECTION AND IMMUNITY

Adnan A, Yaroslavsky A, Carroll J, Selting W, Juliano A, London W, Sonis S, Duncan C, Treister N. The path to an evidence-based treatment protocol for extraoral photobiomodulation therapy for the prevention of oral mucositis. *Frontiers in Oral Health* 2021;2:689386.

Bahammam S, Chen C, Ishida Y, Hayashi A, Ikeda Y, Ishii H, Kim D, Nagai S. Electric and manual oral hygiene routines affect plaque index score differently. *International Journal of Environmental Research in Public Health* 2021;18(24).

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Brennan M, Treister N, Sollecito T, Schmidt B, Patton L, Lin A, Elting L, Hodges J, Lalla R. Tooth failure post-radiotherapy in head and neck cancer. *International Journal of Radiation Oncology and Biological Physics* 2021; Dec 5.

Brock M, Bahammam S, Sima C. The relationships among periodontitis, pneumonia and COVID-19. *Frontiers in Oral Health* 2022;2:801815.

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Tavelli L, Barootchi S, Vera Rodriguez M, Mancini L, Meneghetti P, Mendonça G, Wang H. Early soft tissue changes following implant placement with or without soft tissue augmentation using a xenogeneic cross-link collagen scaffold: A volumetric comparative study. *Journal of Esthetic and Restorative Dentistry* 2021; Dec 22.

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Yaroslavsky A, Juliano A, Adnan A, Selting W, Iorizzo T, Carroll J, Sonis S, Duncan C, London W, Treister N. Validation of a Monte Carlo modelling based dosimetry of extraoral photobiomodulation. *Diagnostics (Basel)* 2021; 26;11(12).

ORAL AND MAXILLOFACIAL SURGERY

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Harris J, Patel N, Keith D. Do rural oral and maxillofacial surgeons prescribe more postoperative opioids? *Oral and Maxillofacial Surgery* 2022; Jan 20.

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ORAL HEALTH POLICY AND EPIDEMIOLOGY

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Baskaradoss J, Tavares M, Al-Mulla F, Al-Ozairi E, Abu-Farha M, Bin-Hasan S, Alsumait A, Devarajan S, Alqaderi H. Association between frequency of toothbrushing and metabolic syndrome among adolescents: A 5-year follow-up study. *International Journal of Environmental Research in Public Health* 2022;19(1).

Borrell L, Williams D. Racism and oral health equity in the United States: Identifying its effects and providing future directions. *Journal of Public Health Dentistry* 2022; Jan 27.

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Choi S, Kalenderian E, Normand L. Measuring the quality of dental care among privately insured children in the United States. *Health Services Research* 2022; 57(1):137-144.

Harris J, Simon L. Which factors are associated with the number of dental providers employed in correctional settings? *Public Health in Dentistry* 2022; Jan 11.

Jivraj A, Barrow J, Listl S. Value-based oral health care: Implementation lessons from four case studies. *Journal of Evidence Based Dental Practice* 2022;22(1S):101662.

Kalenderian E, Hebballi N, Franklin A, Yansane A, Ibarra Noriega A, White J, Walji M. Development of a quality improvement dental chart review training program. *Journal of Patient Satisfaction* 2022; Jan 21.

Lee J, Tan E, Barrow J, Bocala C, Seymour B. Crossing the innovation chasm: Identifying facilitators and barriers to early adoption of the global health starter kit curriculum. *Annals of Global Health* 2021;87(1):113.

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RESTORATIVE DENTISTRY AND BIOMATERIALS SCIENCES

Casey S, Fox D, Duong W, Bui N, Latifi N, Ramesh V, Podborits E, Flake N, Khan A, Gibbs J. Patient centered outcomes among a cohort receiving regenerative endodontic procedures or apexification treatments. *Journal of Endodontics* 2021; Dec 3.

Erdogan O, Casey S, Ruparel N, Sigurdsson A. Bupivacaine for root canal treatment - Practitioner behaviors and patient perspectives: Survey studies. *Local and Regional Anesthesia* 2022;15:11-21.

Gao X, Zheng X, Zhang Y, Dong L, Sun L, Zhao N, Ding C, Ma Z, Wang Y. Deficient or R273H and R248W mutations of p53 promote chemoresistance to 5-FU via TCF21/CD44 axis-mediated enhanced stemness in colorectal carcinoma. *Frontiers in Cell and Developmental Biology* 2022;9:788331.

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Inoue N, Lin J, Chen E, Ohshima H. Student perspectives and feedback on dental licensure by non-patient-based alternative examination. *Journal of Dental Education* 2021; Dec 17.

Lee J, Gallucci G, Lee S. An In-vitro evaluation of articulation accuracy for digitally milled models vs. conventional gypsum casts. *Dental Journal (Basel)* 2022 Jan;10(1).

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Yamakami S, Nagai M, Chutinan S, Ohshima H. 3D digital technology as an alternative educational tool in preclinical dentistry. *European Journal of Dental Education* 2021; Dec 22.

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SCIENCE SERIES

12:00 pm to 1:00 pm – LOGISTICS TO FOLLOW



March 10, 2022

Ralph Marcucio, PhD

Professor of Developmental and Stem Cell Biology, University of California at San Francisco



November 10, 2022

Noriaki Ono, DDS, PhD

Associate Professor of Dentistry, University of Texas Health Science Center



April 14, 2022

Joy Richman, DDS, PhD

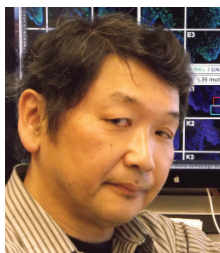
Professor of Pediatric Dentistry, Department of Oral Health Sciences, University of British Columbia



December 8, 2022

Jeffrey Bush, PhD

Professor of Cell and Tissue Biology, University of California at San Francisco



May 12, 2022

Yuji Mishina, PhD

Professor of Dentistry, Department of Biologic and Materials Sciences & Prosthodontics, University of Michigan



June 9, 2022

Wanida Ono, DDS, DMSc, PhD

Assistant Professor of Dentistry, Department of Orthodontics & Pediatric Dentistry, University of Texas Health Science Center



September 15, 2022

Aaron James, MD, PhD

Professor of Pathology Division of Pathology & Surgical Pathology, Johns Hopkins University



October 13, 2022

Patricia Diaz, DDS, PhD

Associate Professor in the Division of Periodontology, University of Buffalo

MULTI-DEPARTMENTAL

Bajonaid A, Park S, Villa A. Oral medicine education in predoctoral programs in US dental schools. *Journal of Dental Education* 2022; Feb 3.

Choi S, Choudhary A, Huang J, Sonis S, Giuliano AR, Villa A. Increasing HPV vaccination coverage on preventing oropharyngeal cancer: A cost-effectiveness analysis. *Tumour Virus Research* 2021; Dec 30;200234.

Grieco P, Jivraj A, Da Silva J, Kuwajima Y, Ishida Y, Ogawa K, Ohyama H, Ishikawa-Nagai S. Importance of bitewing radiographs for the early detection of interproximal carious lesions and the impact on healthcare expenditure in Japan *Annals of Translational Medicine* 2022;10(1):2.

Kueper J, Tsimbal C, Olsen BR, Kaban L, Liao E. SH3BP2-related fibro-osseous disorders of the maxilla and mandible: A systematic review. *International Journal of Oral and Maxillofacial Surgery* 2022;51(1):54-61.

Park S, Chung D, Giannobile W. Professional leadership training programs for dental faculty: Perspectives of the US dental school deans. *Journal of Dental Education* 2022; Feb 3.

Simon L, Giannobile W. Is it finally time for a Medicare dental benefit? *New England Journal of Medicine* 2021;385(23):e80.

Watrous O, Grieco P, Aldosari M, Park S. Admissions data as predictors for student performance in restorative dentistry. *Journal of Dental Education* 2022; Feb 4.

ORAL MEDICINE NEWS



Dr. Lama Alabdulaaly, advanced graduate education student in oral medicine, received the Oral Medicine Residents Research Award from the American Academy of Oral Medicine Research Advancement Committee to fund her research “**Transcriptomic**

Profiling of Marrow Adipose Lineage Precursors Lacking Parathyroid Hormone Receptor.” This work is part of a broader project focusing on the role of marrow adipose lineage precursors on skeletal homeostasis. Dr. Alabdulaaly is working under the supervision of Dr. Roland Baron, professor of Oral Medicine, Infection and Immunity and Dr. Francesca Gori, associate professor of Oral Medicine, Infection and Immunity.



Dr. Sook-Bin Woo, associate professor of Oral Medicine, Infection and Immunity, and Associate Surgeon at Brigham and Women's Hospital, has been appointed lead of the Head and Neck Oncology Program in the new Dana Farber Cancer

Institute, Center for Early Cancer Detection and Intervention. Dr. Woo will share these responsibilities with Dr. Glenn Hanna, assistant professor of Medicine, Harvard Medical School and medical oncologist at Dana-Farber Cancer Institute.

FACULTY NEWS



Dr. Francesca Gori, associate professor of Oral Medicine, Infection and Immunity at HSDM has been named program director of the Biological Sciences in Dental Medicine (BSDM) PhD program. Dr. Gori assumes this role from Dr. Yingzi Yang, professor of

Developmental Biology and associate dean of research. The BSDM program, established in 2001, is offered through the Graduate School of Arts and Sciences at Harvard University. Dr. Gori is also the program director for the HSDM Forsyth Research Academy and director of predoctoral research at HSDM.



Dr. Jennifer Gibbs, assistant professor and program director of the Division of Endodontics in Restorative Dentistry and Biomaterials Sciences, and her team have just published a multi-center clinical study that is the largest

ever published study in pulp regeneration. This study, “**Patient Centered Outcomes Among a Cohort Receiving Regenerative Endodontic Procedures or Apexification Treatments**” has the potential to change the landscape of Endodontics and is at the forefront of clinical innovation. Dr. Gibbs will present her work to the community so please stay tuned for the announcement.

STUDENT RESEARCH DAY & DONALD B. GIDDON LECTURE

April 5, 2022

8:30 am to 9:00 am	Breakfast
9:00 am to 12:00 pm	DMD Student Poster Session
12:00 pm to 1:00 pm	Lunch
12:00 pm to 1:30 pm	Donald B. Giddon, DMD, PhD Lecture
1:00 pm to 4:00 pm	DMD & AGE Student Poster Session



HARVARD
School of Dental Medicine

SAVE THE DATE

PROFESSOR DONALD B. GIDDON, DMD, PHD LECTURE
IN BEHAVIORAL MEDICINE AND DENTISTRY

APRIL 5, 2022 • 12–1:30pm • via Zoom



Lisa Jamieson, BDS, MComDent, PhD

Professor, Australian Research Centre for Population Oral Health; and
Director of the Indigenous Oral Health Unit, The University of Adelaide

"Indigenous Oral Health Inequities and the Role of Intersectionality"

Dr. Lisa Jamieson is recognized as a leading researcher in Indigenous oral health. In this role she has been contributor of information to national Indigenous oral health and dental services policy in Australia. She established four research interventions among Indigenous Australians and was involved in establishing the dental component of Wave-3 of the Aboriginal Birth Cohort. Dr. Jamieson has published widely and been an invited presenter at numerous international research meetings involving Indigenous oral health. She is on the Editorial Board of BMC Public Health, Community Dental Health Community Dentistry and Oral Epidemiology, and the Australian Dental Journal. In recognition of her outstanding contributions to the field, Dr. Jamieson was recently awarded an Investigator Grant from the NHMRC (2022-2026) for her project "Advancing Indigenous Australian oral health through clinical trials, cohort studies and surveillance."

FORSYTH NEWS

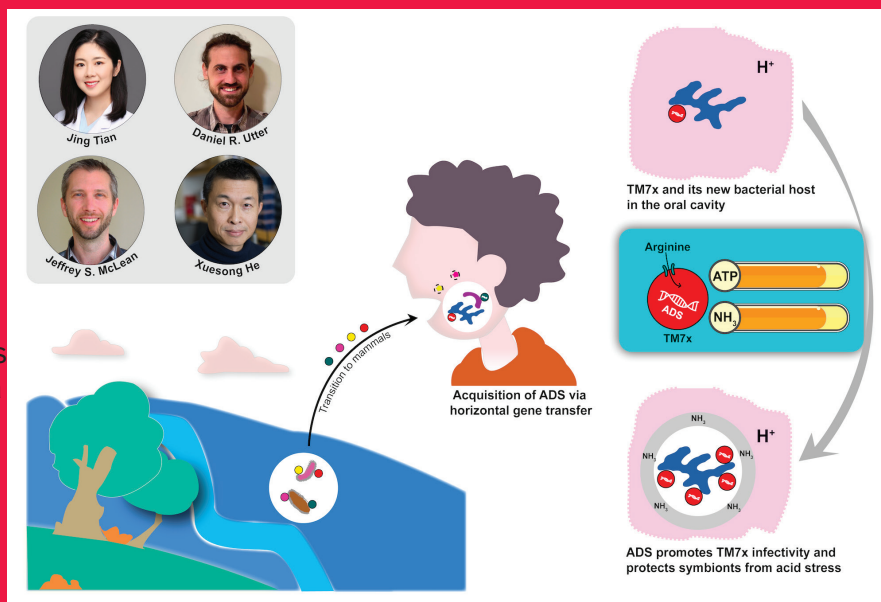
Researchers gain insights into how ultrasmall bacteria from the environment have adapted to live inside humans

The microbes that live inside our mouths, collectively known as the oral microbiome, impact our overall health in many ways that are not yet fully understood. Among the diverse bacterial species living within our mouths is a group belonging to the Candidate Phyla Radiation (CPR). These bugs are especially mysterious because they are ultra-small, adopt a unique symbiotic lifestyle with their host bacteria, and most have yet to be cultured by scientists and studied in the lab. The only bacteria within the CPR to be examined in-depth are a group called TM7, which were cultivated in 2014 for the first time by Forsyth Institute researcher Dr. Xuesong He, associate member of staff.

In an important step toward better understanding these elusive bacteria, Dr. He and his collaborator, Dr. Jeffrey McLean at the University of Washington, have developed a new model system using the first isolated human oral TM7 strain, TM7x, and its host bacterium, *Actinomyces odontolyticus*. Researchers used the model system to experimentally study these tiny bacteria, testing a hypothesis for how TM7 adapted to live inside humans, and providing empirical data to confirm previous genomic studies. Their findings were recently published in the *Proceedings of the National Academy of Sciences*.

This study also adds to a growing body of evidence that TM7 bacteria may play a more protective role in oral health than researchers initially thought. For example, abundance of TM7 is found to increase drastically in the mouths of patients with periodontal disease, which led

scientists to assume the bacteria contributed to the disease. However a recent study by led by Dr. Batbileg Bor, associate member of staff at Forsyth and research associate in Oral Medicine, Infection and Immunity at HSDM, showed the opposite effect—TM7 decreased periodontal inflammation and bone loss in a mouse model.



HARVARD
School of Dental Medicine

A PUBLICATION OF THE OFFICE OF RESEARCH

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Associate Dean for Research*

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QUESTIONS/SUGGESTIONS?

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