DEAN GIANNOBILE ESTABLISHES LAB AT HSDM

His current lab has funded projects on bone anabolic agents for rebuilding bone around teeth and dental implants, gene delivery approaches to accelerate dental implant osseointegration, and precision medicine work for patient stratification by genetic and epigenetic methods via saliva diagnostics. Much of this work involves both translational research and clinical research approaches to better diagnose and treat patients through implementation of human clinical trials.

William Giannobile, DDS, MS, DMSc, dean of HSDM and professor of Oral Medicine, Infection and Immunity, has established his research laboratory on the fourth floor of the REB building.

Dean Giannobile has maintained a continuously NIH-funded research program over the past 25 years, and serves as co-principal investigator for the NIDCR-supported Michigan-Pittsburgh-Wyss Regenerative Medicine Resource Center. The goal of the Center is to translate early stage dental, oral, and craniofacial reconstructive technologies into clinical practice.

He has produced over 300 manuscripts, textbook chapters, and patents focused on periodontology, regenerative medicine, and oral health research. Dr. Giannobile recently completed a 10-year term as the Editor-in-Chief for the Journal of Dental Research, the official journal of the International Association for Dental Research. He serves as a consultant to the U.S. Food and Drug Administration for dental devices, and Associate Editor for the upcoming Surgeon General’s Report on Oral Health – 2021.

Jim Sugai is the senior research laboratory specialist in the Giannobile Lab at the University of Michigan Department of Periodontics and Oral Medicine. Jim will provide remote oversight of the Giannobile Lab.

Shogo Maekawa, DDS, PhD, osteology research scholar and postdoctoral fellow in Oral Medicine, Infection and Immunity, will join the Lab in January 2021. Dr. Maekawa received his DDS and PhD from Tokyo Medical and Dental University (TMDU).

Prior to joining HSDM and the University of Michigan, he was a specially-appointed assistant professor in the Department of Periodontology at the TMDU, and he is currently an adjunct instructor at TMDU.
PUBLICATIONS

DEVELOPMENTAL BIOLOGY


ORAL MEDICINE, INFECTION AND IMMUNITY


**ORAL AND MAXILLOFACIAL SURGERY**


**RESTORATIVE DENTISTRY AND BIOMATERIALS SCIENCES**


**ORAL HEALTH POLICY AND EPIDEMIOLOGY**


continued on page 5
AWARDS & RECOGNITION

Dr. Arjun Saggu, MMSc21 (periodontology), has been selected as one of the four finalists of the clinical research competition at the 2020 American Academy of Periodontology Annual Meeting. He presented his poster entitled “RMS/mOCT Probe for Chairside Diagnosis of Periodontal Diseases.” The goal of this study is to test the validity and reliability of a combined Raman microspectroscopy and micro-optical coherence tomography instrument in assessing marginal periodontium in health and periodontitis. Dr. Saggu presented results on the probe’s ability to distinguish between healthy and diseased sites using a composite measure of DNA, collagen type I, oral epithelium and connective tissue in marginal gingiva measurements that were confirmed by histology as gold standard. This work was carried out as part of a Phase II SBIR project supported by an NIH grant under the supervision of his mentor, Dr. Corneliu Sima, assistant professor of Oral Medicine, Infection and Immunity. The study also included a collaboration with Dr. Hatico Hasturk, senior member of the staff and director of the Center for Clinical and Translational Research at the Forsyth Institute, and Dr. Nicusor Iftimia, principal research scientist at Physical Sciences Inc.

Dr. Ruiying Chen, a postdoctoral fellow in the Baron-Gori Lab in the Department of Oral Medicine, Infection and Immunity, received the American Society for Bone and Mineral Research (ASBMR) 2020 Young Investigator Award. Dr. Chen presented her research entitled “Secreted Frizzled Receptor Protein 4 (Sfrp4) is Required to Maintain Proper Ctsk+ Periosteal Stem/Progenitor Cell Niche Function.” Dr. Chen’s project is funded by an NIH-NIDCR grant awarded to Dr. Francesca Gori, assistant professor in the Department of Oral Medicine, Infection and Immunity, Division of Bone and Mineral Research; director of predoctoral research; and program director for the Research Academy at HSDM and the Forsyth Institute.

Dr. Jessica Latimer, DMSc24 (periodontology), received two awards from the American Academy of Periodontology 2020 Virtual Annual Meeting, Research Forum Poster Competition. She received the Clinical Science Award (given to one of four finalists in the clinical science division of the research competition); and the Clinical Impact Award (given to one of eight finalists in the clinical or basic science divisions of the research competition to the individual...
who has the greatest potential for changing and improving periodontal health and patient care. Dr. Latimer presented her research, “Interproximal Contacts Between Implant Restorations and Adjacent Natural Teeth as a Risk Indicator for Peri-Implant Disease: A Cross-Sectional Study.” Collaborators on the study include: Dr. Amit Gharpure (University of Washington School of Dentistry), Dr. Hahngoo Kahng (University of Washington School of Dentistry), Dr. Faisal Aljofri (Imam Abdulrahman Bin Faisal University College of Dentistry), and Dr. Diane Daubert (University of Washington School of Dentistry).

Dr. Ozge Erdogan, DMSc22 (oral biology), in the Harvard Forsyth Research Academy, received a competitive research grant from the Foundation for Endodontics for her research “Exploring Host-Microbiome Interactions in Asymptomatic Irreversible Pulpitis Using Quantitative Proteomics.” Dr. Erdogan’s project is being completed under the mentorship of Dr. Jennifer Gibbs, assistant professor of Restorative Dentistry and Biomaterials Sciences and program director for the advanced graduate education program in endodontics at HSDM and Dr. Markus Hardt, assistant member of the staff at the Forsyth Institute, and lecturer on Developmental Biology at HSDM. Dr. Erdogan was also selected as the highest-scoring non-resident applicant in the Fall 2020 research grant cycle. The purpose of this project is to understand how patients’ symptoms can range from excruciating, intolerable pain to a complete lack of symptoms during dental pulp inflammation due to deep caries. More specifically, this research study aims to profile host response, as well as the functional profile of the caries microbiome at protein/peptide level by investigating pulp and caries samples from patients and using a quantitative proteomics approach with hopes of identifying novel ways to alleviate pain, as well as to improve diagnosis.

ORAL HEALTH POLICY AND EPIDEMIOLOGY (CONTINUED)


MULTI-DEPARTMENTAL


The Office of Global and Community Health at Harvard School of Dental Medicine hosted a special oral health seminar featuring the U.S. Surgeon General, Vice Admiral Jerome Adams, MD, MPH. The Zoom presentation drew over 300 attendees. In his talk, Dr. Adams highlighted the importance of oral health, its social determinants, and how it is inextricably integral to general health. Jane Barrow, MS, associate dean for Global and Community Health, Oral Health Policy and Epidemiology, and William V. Giannobile, DDS, MS, DMSc, dean of HSDM and professor of Oral Medicine, Infection and Immunity were the moderators.

Martin Nweeia, DMD, DDS, lecturer in the Department of Restorative Dentistry and Biomaterials Sciences, is part of a collaboration featured in a Nature cover article entitled, “A Comparative Genomics Multitool for Scientific Discovery and Conservation.”

In this article, Dr. Elinor Karlsson, director of the Vertebrate Genomics Group at the Broad Institute of MIT and Harvard and her colleagues (including Dr. Nweeia and the Zoonomia Project) describe their analysis of 240 genomes representing more than 80% of placental mammal families, including 122 newly sequenced species. To analyze these massive data sets, both teams used new software called Progressive Cactus. The Zoonomia Project is an international collaboration to discover the genomic basis of shared and specialized traits in mammals. By prioritizing phylogenetic diversity and making data available quickly and without restriction, the Zoonomia Project aims to support biological discovery, medical research and the conservation of biodiversity.

A Publication of the Office of Research

Malcolm Whitman, PhD
Associate Dean for Basic Science

Yingzi Yang, PhD
Associate Dean for Translational Research

Dawn M. DeCosta
Editor, Design and Layout

Heather M. Denny
Editing

Lia Sgourakes
Editing

Ashley Simmons
Editing

If you have questions, or comments, please contact Dawn M. DeCosta, Director of Research Operations at 617-824-0715 (or) dawn_decosta@hsdm.harvard.edu