FRANCESCA GORI, PHD, RECEIVES NIH-NIAMS R01 AWARD

Francesca Gori, PhD, assistant professor of Oral Medicine, Infection and Immunity, received an NIH-NIAMS R01 Award for, “Biology of Cortical Bone of Long Bones and Calvarium: Role of SFRP4 in Periosteal Bone Formation.”

The periosteum plays a critical role in cortical bone expansion and homeostasis, has regenerative capabilities and responds to anabolic drugs. The goal of this study is to define the role of Sfrp4, a Wnt antagonist, on the periosteal surface of the cortex. Gori’s Lab hypothesizes that Sfrp4 expressed in a discreet pool of periosteal progenitors influences periosteal stem/progenitor cell activities in cortical bone and contributes to bone regenerative potential and to response to anabolic drugs. Insights gained from the study will be translatable to human diseases associated with bone fragility, and to the development of potential strategies for regeneration of bone defects. This project will be performed in part in collaboration with Dr. Matthew Greenblatt at Cornell University, New York.

Dr. Gori also received an award from Radius Health, Inc. for “Comparison of the Periosteal Response to Abaloparatide Versus Teriparatide.” This project is a continuation of a study awarded from Radius Health, Inc. to Roland Baron DDS, PhD, professor and chair of Oral Medicine, Infection and Immunity, focused on determining whether the differential effects of osteoporosis medications, Abaloparatide and Teriparatide, on bone resorption originate from different responses of the osteocytes to these two ligands. In this study Gori and Baron (Co-PIs), will assess whether these anabolics regulate specific and/or distinct pools of periosteal cells and will identify specific common and unique signaling pathways differentially regulated by Abaloparatide and Teriparatide in the periosteal niche.

MARY TAVARES, DMD, MPH, RECEIVES HRSA AWARD

Mary Tavares, DMD, MPH, program director of the AGE program in dental public health, Oral Health Policy and Epidemiology (OHPE), received a HRSA award for, “Catalyzing Oral Health Workforce for Rural and Vulnerable.”

This project will establish two new postdoctoral training programs that will directly address a gap in dental education and access to care with respect to underserved and vulnerable populations in rural areas. HSDM will partner with Bi-State Primary Care Association, Dartmouth-Hitchcock Medical Center, and five rural care delivery sites. “We propose to create an Advanced Education in General Dentistry (AEGD) residency led by Dr. John Zdanowicz assistant professor in OHPE, and add a dedicated track to our Dental Public Health residency led by Dr. Steffany Chamut, Co-PI and instructor in OHPE, to address oral health care delivery in rural areas with a focus on vulnerable, elderly and underserved groups” said Dr. Christine Riedy, chair and associate professor of OHPE at HSDM.

According to research by the Center for Integration of Primary Care and Oral Health (CIPCOH) co-led by Dr. Shenam Ticku, instructor in OHPE and Dr. Tien Jiang, instructor in OHPE, the majority of AEGD and GPR residencies have a gap within their curricula with scant coverage of rural health and the social determinants of health. The new residencies will deliver didactic instruction and clinical rotations with experienced mentors that will prepare primary care and public health dentists to work with underserved populations. By the end of the five-year project period, Tavares anticipates a total of 17 dental graduates.

For more information about the rural track AEGD and DPH Residency programs for July 2021, contact the department of Oral Health Policy and Epidemiology.
Roland Baron, DDS, PhD, professor and chair of Oral Medicine, Infection and Immunity at HSDM, received an NIH-NIAMS R01 Award for, “Mechanism of Action of PTH: New Signaling Components that Regulate Bone Formation and Bone Marrow Fat.” This is a multi-PI grant with Cliff Rosen, MD, from Maine Medical Research Center in Portland, Maine.

The maintenance of bone mass is essential for the prevention of osteoporosis and fractures, a major cause of disability in older adults. Osteoporosis medications, Teriparatide (Forteo®) and Abaloparatide (Tymlos®) target the human parathyroid hormone (PTH) receptor. These are approved anabolic drugs for osteoporosis, a widespread bone fragility chronic condition linked to aging and characterized by dysfunctions of cells in bone. This dysfunction is often associated with an increase in bone marrow fat. Bone forming cells (osteoblasts) and fat cells (adipocytes) share a common understanding how PTH influences whether these cells become a bone or a fat cell. This is important for the development of future treatments for osteoporosis, fracture healing, as well as for the cell therapy aimed at bone regeneration.

Drs. Baron, Rosen and colleagues will investigate whether preventing bone marrow fat will favor bone formation in response to PTH treatment. This work is innovative as it focuses on the antiadipogenic responses to PTH/PTHrP treatment and their implication in anabolic responses of the skeleton.
Gu Y, Han X. Toll-like receptor signaling and immune regulatory lymphocytes in periodontal disease. International Journal of Molecular Science 2020; May 8;21(9).


Van Dyke T. Shifting the paradigm from inhibitors of inflammation to resolvers of inflammation in periodontitis. Journal of Periodontology 2020; May 22.


ORAL AND MAXILLOFACIAL SURGERY


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PUBLICATIONS (CONT).


ORAL HEALTH POLICY AND EPIDEMIOLOGY


RESTORATIVE DENTISTRY AND BIOMATERIALS SCIENCES


MULTI DEPARTMENTAL


Okuji D, Kritz-Silverstein D, Pham H, Chen E, Wu Y, Chan W. Opportunities for age-specific interprofessional collaboration between physicians and dentists in pediatric patients. Pediatric Dentistry 2020; May 15.
### AGE AWARDS – DENTAL PUBLIC HEALTH

**Nora Alamer, DMSc21, Dental Public Health**
Dr. Alamer received the Caswell A. Evans Population Oral Health Post-Professional Award from the American Public Health Association for “Dental Care Utilization Trends Among Disabled US Adults: 2010-2018.” This project is being completed under the mentorship of Dr. Israel Agaku at HSDM.

**Muath Aldosari, DMSc20, Dental Public Health**
Dr. Aldosari received the 2020 James M. Dunning Award. His thesis “Effectiveness of a Comprehensive School-Based Caries Prevention Program: ForsythKids” was completed under the mentorship of Dr. Jacqueline Starr at the Forsyth Institute.

**Hesham Alhazmi, DMSc21, Dental Public Health**
Dr. Alhazmi received second place for the Leverett Graduate Student Merit Award for Outstanding Achievement in Dental Public Health for his project “Dental Care Utilization Inequalities Among U.S. Adults Who Can’t Afford Dental Treatment: 2010-2018.” This project is being completed under the mentorship of Dr. Christine Riedy at HSDM. Dr. Alhazmi also received the Caswell A. Evans Population Oral Health Post-Professional Award from The American Public Health Association for “Beyond the Mouth: Integration of Social Determinants of Health within AEGD and GPR Curricula.” This project is also being completed under the mentorship of Dr. Christine Riedy at HSDM.

**Shaikha AlDukhail, DMSc20, Dental Public Health**
Dr. AlDukhail received the 2020 Community Service Award. Her thesis “Effectiveness of Antismoking Mass Media Campaigns to Change the Public’s Behavior” was completed under the mentorship of Dr. Israel Agaku at HSDM.

**Nailah Tilman, MMSc20, Dental Public Health**
Dr. Tilman received the 2020 Lois K. Cohen Award. Her thesis “Dental Students’ Attitudes and Perceptions of Dental Public Health” was completed under the mentorship of Drs. Mary Tavares and Brian Swann at HSDM.
**RESEARCH AWARDS**

**Vicki Rosen, PhD, professor of Developmental Biology and interim dean,** received funding from the Harvard Stem Cell Institute for “Transplantation of Isogenic, Gene-Edited, Biosensor-Enabled Hematopoietic Stem Cells to Treat Fibrodysplasia Ossificans Progressiva.” The project lead is Shailesh Agarwal, MD, associate surgeon, Division of Plastic and Reconstructive Surgery at Brigham and Women’s Hospital and Dr. Rosen is the Collaborative PI.

**Rosalyn Sulyanto, DMD09, MS, instructor in Developmental Biology and director of postdoctoral research, Department of Dentistry at Boston Children’s Hospital,** received a Colgate Palmolive CARE grant for “The Oral Microbiota of Children Treated with the ECC Chronic Disease Management Protocol.” Dr. Sulyanto’s mentor is Dr. Man Wai Ng, associate professor of Developmental Biology at HSDM.

**Jonathan Ang, DDS, Pediatric Dentistry resident at Boston Children’s Hospital,** was selected as a finalist for the NuSmileGraduate Student Research Award for his project titled, “The Distinct Microbiota of Pediatric Dental Abscesses and Cellulitides.” Dr. Ang’s mentor is Dr. Rosalyn Sulyanto, instructor in Developmental Biology at HSDM.

**AGE AWARDS**

**Asma Almazyad, DMSc20, Oral Pathology**

Dr. Almazyad received The Waldron Award from the American Academy of Oral and Maxillofacial Pathology (AAOMP) for recognition of an outstanding resident that is enrolled in a graduate AAOMP residency-training program in the specialty of oral pathology. Dr. Almazyad’s project “Exploring the Role of Neuropilin Receptors and Semaphain 3 in Oral Sqamous Cell Carcinoma” received the best scientific research poster presented at the AAOMP annual meeting and was completed under the mentorship of Dr. Diane Bienberg at the Boston Children’s Hospital.

**Matthew Harper, Cert20, in Pediatric Dentistry**

Dr. Harper received 3rd place in the orthodontics poster competition at the AAPD Annual Session for his project “Mandibular Canine Development to Predict Maxillary Cleft Site Canine Development.” This project was completed under the mentorship of Drs. Elizabeth Ross, James MacLaine, and Bonnie Padwa at Boston Children’s Hospital.

**Jie Sun, MMSc20 Prosthodontics**

Dr. Sun received the Joseph L. Henry Award. Her thesis “Effect of Occlusal Vertical Dimension Increase on Lower Facial Height and Facial Esthetics” was completed under the mentorship of Dr. Sang Lee at HSDM.
Brian Swann, DDS, MPH, A Career Dedicated to Improving Outcomes in Resource-Poor Settings

Brian Swann, DDS, MPH, is assistant professor of Oral Health Policy and Epidemiology and the Joseph L. Henry Fellow in Minority Health Policy. Dr. Swann is the chief of Oral Health Services for the Cambridge Health Alliance where he practices clinical dentistry.

He conducts the Oral Physician Program within the General Practice Residency, a concept that expands primary care into the scope of oral health. Dr. Swann has been involved with outreach projects throughout the world and his primary focus is to build capacity in resource-poor settings.

A 2012 HMS Minority Health Policy meeting introduced Dr. Swann to members of the Aquinnah Wampanoag Tribe. This led to a collaboration on a Robert Wood Johnson Foundation grant to conduct an oral health needs assessment for the Tribe. Dr. Swann led a team of HSDM students who partnered with tribal members to understand not only oral health needs but social determinants of overall health and wellness for the Aquinnah Tribe.

This collaboration has provided HSDM students with a deep appreciation for the unique health challenges experienced by American Indian and vulnerable island-based communities. The research collaboration expanded to include students from Northeastern University’s (NEU) Bouve School of Health Sciences in the fields of nursing and allied health professions. The interprofessional perspectives of the NEU students enriched the research as well as HSDM student learning.

The HSDM students formed an outreach group and are planning the next phase of research with the Tribe. The new phase will build on the earlier work and will focus on integrating oral health services with other primary health services offered at the tribal clinic. Dr. Swann and the students believe that shifting the oral care out of the hospital and into a tribal clinic will improve oral health literacy and accommodate cultural nuances that will promote best practices for the Tribe. They are also researching the philosophy and usage of the ancient "medical wheel", how it demonstrates the essence of good health and how it might be incorporated into oral health care.

Dr. Swann and the student team in collaboration with tribal chair Cheryl Andrews Maltais, will spend the next 6-9 months updating the needs assessment and revising the oral health plan for contextual relevance and sustainability.
JAMA SURGERY FEATURE ARTICLE

Daisy Ji, DMD18, clinical fellow in Oral and Maxillofacial Surgery at Massachusetts General Hospital, is first author on a June 2020 manuscript, “Assessment of Risk Factors for Suicide Among US Health Care Professionals” published in JAMA Surgery as the feature article.

At a time when the Nation’s healthcare providers are under increasing stress, a newly published article in JAMA Surgery examines the risk factors contributing to suicide in their ranks. In this cohort study of 170,030 individuals who died by suicide, health care professionals who died by suicide were more likely to have problems with their jobs, physical health, and civil legal issues and to have Asian or Pacific Islander ancestry compared with individuals in the general population who died by suicide. A direct comparison between surgeons and nonsurgeon physicians revealed that surgeons had a higher risk of suicide if they were older, male, married, or currently receiving treatment for mental illness.

“The most surprising finding is the age of the average suicide victim amongst healthcare providers. It was significantly older than the general population, and it far outstripped victims in their 20-30s, which is when residents typically are going through training. This is a previously unrecognized risk factor — older age. There were racial differences also that were notable, Asians were at higher risk,” said Ji.

Collaborators include Faith Robertson, MD, MSc, resident in Neurosurgery at Massachusetts General Hospital, Nisarg Patel, DMD19, clinical fellow in Oral and Maxillofacial Surgery at University of California, San Francisco; Zachary Peacock, DMD, MD, assistant professor of Oral and Maxillofacial Surgery HSDM; and Cory Resnick, MD, DMD, assistant professor of Oral and Maxillofacial Surgery HSDM.