Malcolm Whitman Receives R21 Award from NIH-NIAID

Malcolm Whitman, PhD, professor of Developmental Biology, and associate dean for Basic Science, received an award from NIH – National Institute of Allergy and Infectious Diseases for an R21 titled “Novel Nutrient-Sensing Pathway Suppresses Pathologic Tissue Remodeling.”

The ability of cells to sense amino acids has fundamental effects on cell behavior. The mechanisms that underly sensing of amino acid availability have become important targets for therapeutics to treat a variety of chronic diseases. The Whitman Lab has identified a novel regulator of amino acid sensing with important therapeutic implications. They plan to define the signaling pathway downstream of this key regulator. Findings from this study will establish a new pathway for nutrient sensing in eukaryotic cells and elucidate its link to therapeutic modulation of tissue damage.

Alessandro Villa Receives Research Award from Bristol-Myers Squibb, Co.

Alessandro Villa, DDS, PhD, MPH, (left) assistant professor of Oral Medicine, Infection and Immunity and program director for the Oral Medicine specialty training program at HSDM, received an award from Bristol-Myers Squibb, Co. titled “Safety and Efficacy of Nivolumab in Treating Oral Proliferative Verrucous Leukoplakia.”

For this study, Villa is co-principal investigator working with Glenn Hanna, MD, (middle), co-principal investigator, instructor in medicine at Harvard Medical School and oncologist at Dana Farber Cancer Institute, as well as Sook-Bin Woo, DMD, MMSc, (right) co-investigator, associate professor of oral medicine, infection and immunity and program director for the Oral and Maxillofacial Pathology specialty training program at HSDM. This clinical trial is an exciting collaboration amongst medical oncologists, oral medicine specialists and pathologists. The goal of this phase II clinical trial is to test the safety and effectiveness of Nivolumab (an immunotherapy agent used to treat many cancers) in the management of oral proliferative leukoplakia. Unlike solitary leukoplasias, the majority of patients with proliferative leukoplakia develop oral cancer and there is currently no effective therapy.
Yanshan Liu, MD, joined the Li Lab as a visiting postgraduate research fellow in the Department of Developmental Biology. Liu is from Qingdao City, China and received his MD degree in Oral and Maxillofacial Surgery from the School of West China Somatology, Sichuan University, China. Previously, Liu worked as an oral and maxillofacial surgeon in an affiliated hospital of Qingdao University in China. In the Li Lab, he is working on a research project to determine chondro-protective effects of a small-molecular inhibitor of discoidin domain receptor 2 on articular cartilage of mouse knee joint.

Yin Bo Niu, MS, PhD, joined the Baron-Gori Lab as a visiting associate professor in the Department of Oral Medicine, Infection and Immunity. Niu holds an MS degree in zoology from Northwestern University in China, and a PhD degree, from Northwestern Polytechnical University, China. She is currently an associate professor in the Key Laboratory for Space Bioscience and Biotechnology, School of Life Science, Northwestern Polytechnical University, Xi’an, Shaanxi, China. In the Baron-Gori Lab, Niu will be investigating the link between the matrix that surrounds the osteocytes and the way in which they regulate bone remodeling and/or mineral metabolism. In particular, she will focus on the role that the osteocytic MMP13 has in these processes.

Qiliang Xin, PhD, joined the Yang Lab as a postdoctoral research fellow in the Department of Developmental Biology. Zhou is from Beijing, China, and received his PhD from the Institute of Zoology at the Chinese Academy of Sciences, Beijing China. In the Yang Lab, Xin will focus on the underlying genetic and pathogenic mechanism of scoliosis and the molecular investigation of bone development.

Cui Ye, PhD, DDS, joined the Li Lab as a visiting postgraduate research fellow in the Department of Developmental Biology. Ye has a DMD degree and PhD in Orthodontics from West China Stomatological School, Sichuan China. Before joining the Li Lab, Ye worked as an orthodontist at the Dental School of Fudan University, Shanhai, China. In the Li Lab, Ye is working on a research project to determine chondro-protective effects of a small-molecular inhibitor of discoidin domain receptor 2 on articular cartilage of mouse knee joint.

Anna Idelevich Receives 2018 Outstanding Postdoctoral Fellow Award

Congratulations to Anna Idelevich, PhD, research fellow in the Baron-Gori Lab in the Department of Oral Medicine, Infection and Immunity, for receiving a 2018 Outstanding Postdoctoral Fellow Award.

Dr. Idelevich’s research focuses on identifying the neuronal circuits regulating energy/glucose metabolism and bone, which recently led to a significant paper published in the Journal of Clinical Investigation, titled “Neuronal Hypothalamic Regulation of Body Metabolism and Bone Density is Galanin Dependent.” In nominating Idelevich, Dr. Roland Baron stated, “Dr. Idelevich exhibits an exceptional scientific curiosity, bright mind, rigor, caring attitude, and an ability to embark upon a project leading it through all the stages.” In the Baron-Gori Lab, she mentors postdocs, students and has organized a nanocourse.

New Researchers
DEVELOPMENTAL BIOLOGY


Refai A, Gritli S, Barbouche M, Essafi M. Mycobacterium tuberculosis virulent factor ESAT-6 drives macrophage differentiation toward the pro-inflammatory M1 phenotype and subsequently switches it to the anti-inflammatory M2 phenotype. Frontiers in Cellular and Infection Microbiology 2018;8:327.


ORAL HEALTH POLICY AND EPIEDEMOLOGY


Chandrupatla S, Thompson L, Kuna S, Swann B. A model to improve access to care and reduce treatment period for dentures. Journal of California Dental Association 2018; Nov.


ORAL AND MAXILLOFACIAL SURGERY


RESTORATIVE DENTISTRY AND BIOMATERIALS SCIENCES


Dr. Kenichi Nagano (left) and Dr. Kun Chen (right) with ASBMR past-president Dr. Michael Econs (middle), postdoctoral fellows in the Baron-Gori Lab in the Department of Oral Medicine, Infection and Immunity, received the American Society for Bone and Mineral Research (ASBMR) 2018 Young Investigator Awards. Chen also received the Young Investigator Award from The Rare Bone Disease Alliance. They presented their research “The Wnt Agonist R-spondin 3: An Unexpected Negative Regulator of Bone Formation” and “Cell Autonomous Sfrp4-Dependent Inhibition of Non-Canonical Wnt Signaling in Osteoclasts Prevents Osteoclastogenesis, Ensuring Normal Cortical Bone Development.”

Dr. Mengrui (Mona) Wu, postdoctoral fellow also in the Baron-Gori Lab, in the Department of Oral Medicine, Infection and Immunity, received the American Society for Bone and Mineral Research (ASBMR) 2018 Travel Award for her work “YAP and TAZ Deletion in Mature Osteoblasts Reduce Bone Formation and Increase Marrow Adipocyte Accumulation.”

Dr. Brett Stein, third-year prosthodontics resident, received second place for his research presentation at the annual American College of Prosthodontists meeting for his research “Digital Analysis of the Selective Impression Technique.” Stein’s project is funded by a Greater New York Academy of Prosthodontics Student Research Grant and mentored by Dr. Sang Lee, assistant professor in the Department of Restorative Dentistry and Biomaterials Sciences; director of Advanced Graduate Education; and program director for the Prosthodontics specialty training program at HSDM.

Brendan Wu, MMSc, third-year DMD student, received the Best Oral Abstract Scientific Presentation Award for his research “Do Steiner or Harvold Cephalometric Analyses Better Correlate with Clinical Impression in Orthognatic Surgery Patients?” at the 100th Annual American Association of Oral and Maxillofacial Surgeons conference. Wu’s research mentor is Dr. Zachary Peacock, associate professor in the Department of Oral and Maxillofacial Surgery.

Dr. Yong Kwang Kim, third-year prosthodontics resident, received Third Place Poster Award for his research “Introducing Anterior Tripod Stabilization Value - A Novel Evaluative Tool To Assess Biomechanical Stability in Long-Span Tooth-Supported Fixed Partial Dentures With a Pier Abutment” at the American Academy of Esthetic Dentistry annual session. For this study, Kim’s research mentors are Drs. Jason Lee and Sang Lee in the Department of Restorative Dentistry and Biomaterials Sciences.
The original sponsor for the SBIR R44 is NIH-NIDCR and the contracted sponsor is Physical Sciences, Inc., Andover, MA. Sima is principal investigator for the HSDM-based project and will coordinate the technology validation for periodontal clinical use, in collaboration with Dr. Hatice Hasturk, associate member of the staff, Department of Applied Oral Sciences and Director, Center for Clinical and Translational Research at the Forsyth Institute.

This technology will combine high resolution micro-optical coherence tomography with Raman microspectroscopy for in vivo assessment of periodontal tissue integrity and therapy guidance. Both Raman and optical coherence tomography are powerful technologies with proven success in human tissue imaging, avoiding the need for ionizing radiation exposures. While optical coherence tomography allows for the visualization of soft tissue anatomy, Raman is used to interrogate the biochemical composition of gingival tissues, as indicators of structural integrity. The complementary capabilities of these two optical technologies will be exploited to offer a clinically comprehensive set of parameters to more reliably and precisely determine the periodontal health status.

**Publications (cont.)**

**ORAL MEDICINE, INFECTION AND IMMUNITY**


Hong H, Chen C, Kim D, Machtei E. Ridge preservation procedures revisited: a randomized controlled trial to evaluate dimensional changes with two different surgical protocols. *Journal of Periodontology* 2018; Oct 27.


**MULTI-DEPARTMENTAL**


Save The Date

SCIENCE SPEAKER SERIES
JANUARY 9, 2019 • 11AM-12PM
HSDM REB AUDITORIUM • 190 LONGWOOD AVENUE

YANG CHAI, DDS, PHD
Professor of Craniofacial Molecular Biology;
Associate Dean of Research, University of Southern California Ostrow School of Dentistry

“Bi-directional interaction between mesenchymal stem cells and transit amplifying cells in mesenchymal tissue homeostasis”

HSDM/Forsyth Chalk Talks
December 14, 2018 – 12 to 1pm @ HSDM

Floyd Dewhirst, DDS, PhD, senior member of the staff at Forsyth Institute; professor of Oral Medicine, Infection and Immunity at HSDM, will present “Microbial Dark Matter and the Human Oral Microbiome.”

Dewhirst’s primary research focus has been to define the diversity, genetic capability and pathogenic potential of organisms present in the human oral cavity. His effort has resulted in the identification of approximately 700 species or phylotypes of human oral bacteria that are described in the Human Oral Microbiome Database (HOMD - http://www.homd.org).