

## Jeffrey Shaefer, DDS, Receives Clinical Research Award



Dr. Jeffrey Shaefer, Assistant Professor of Oral and Maxillofacial Surgery at HSDM, received an award from DentalVibe, Inc., for his

project, “Evaluation of the Dental Vibe Injection Comfort System.” This is a randomized, single-blinded clinical trial assessing the use of vibration technology during the administration of dental anesthesia. This technology may be used for the comfortable administration of any intraoral injection, including maxillary infiltrations, palatal injections, and mandibular block injections.

The Dental Vibe device has been shown to lower patient discomfort from maxillary anesthesia. The HSDM study will measure Dental Vibe effectiveness when used in conjunction with the types of injections patients have the most difficulty tolerating; mandibular anesthesia techniques such as the inferior alveolar nerve and long buccal nerve blocks. Its affect on onset of anesthesia will also be evaluated.

Shaefer will enroll 60 study participants at HSDM in this clinical trial.

## Yingzi Yang, PhD Joins HSDM



Dr. Yingzi Yang, Professor of Developmental Biology at HSDM, studied Wnt and Hedgehog signaling in early limb patterning under the guidance of Dr. Lee Niswander at the Sloan-Kettering Cancer Institute, where she was awarded her PhD in Molecular Biology from Cornell University/ Weill Cornell Medical College. After completing a postdoctoral fellowship in mammalian developmental biology and genetics in the laboratory

of Dr. Andy McMahon at Harvard University, she joined the Genetic Disease Research Branch of the National Human Genome Research Institute (NHGRI) as a tenure-track investigator in 2000 and ventured into the field of skeletal biology. Yang received tenure at NHGRI in 2006 and was named head of the Developmental Genetics Section and a senior investigator of NHGRI.

Over the past 14 years, Yang has made groundbreaking contributions to understanding the roles of Wnt and Hedgehog signaling in embryonic development, skeletal biology and skeletal diseases. Her research has successfully bridged discoveries of fundamental mechanisms with characterization and treatment of diseases including severe birth defects, osteoporosis, osteoarthritis and heterotopic bone formation. Her studies have revealed fundamental mechanisms of Wnt and Hedgehog signal transduction and their critical roles in many aspects of embryonic morphogenesis and adult physiology. Current efforts in the Yang Lab are divided into three major projects:

1. Investigating the molecular and cellular mechanisms whereby the Gs and Hedgehog signaling pathways regulate fate choices of differentiating mesenchymal progenitor/stem cells under both physiological and pathological conditions.
2. Investigating the regulatory mechanisms whereby Wnt signaling controls planar cell polarity in various aspects of embryonic morphogenesis, skeletal development and homeostasis.
3. Investigating the roles of the Wnt and Hippo signaling pathways in mediating the effects of mechanotransduction in both development, physiology and regeneration in the liver and skeleton.

## Dr. Rafael Guerra and the Dental Diagnostic System Project



Dr. Rafael Guerra joined the Oral Health Policy and Epidemiology Department as Director of Dissemination in July 2014, bringing a completely different perspective to the importance of proper documentation in clinical dentistry. Guerra is now part of the team lead by Dr. Elsbeth Kalenderian, promoting standardized documentation of dental diagnostic terms through the usage of the Dental Diagnostic System (DDS) terminology.

Prior to joining HSDM, Guerra held positions as a Forensic Odontologist for the Florida Department of Health, where he helped with the identification of human remains by dental records. His disaster experience includes the World Trade Center September 11 attack, airplane crashes and natural disasters both in the US and abroad. A native of Rio de Janeiro - Brazil, Guerra holds a Dental Science degree from Unigranrio University and a Master's degree in Human Anatomy and Forensic Anthropology from University of South Florida College of Medicine. During his personal time, Guerra has a passion for biological sciences that unfolds into several hobbies, including breeding tropical fish, gardening (both terrestrial and aquatic plants) and biological illustration, predominantly illustrations of trees using pencil on paper.



Dr. Bruce Donoff congratulates Dr. Giuseppe Intini for receiving an Award from the Eleanor and Miles Shore 50th Anniversary Fellowship Program for Scholars in Medicine. Dr. Intini is photographed above with his wife, Dr. Joelle Carlo and their sons Ian and Aidan.

## HSDM Students Awarded Top Prizes at Soma Weiss Student Research Day

The 75th Annual Soma Weiss Student Research Day was held on January 15, 2015 at the Harvard Medical School (HMS). This day honors the memory of Dr. Soma Weiss (1899-1942), an inspiring teacher and physician at HMS and an ardent supporter of student research. Nearly 200 HMS and HSDM students presented their research, and we are pleased to announce that two HSDM students received distinguished prizes for their research.



**James Baker,** DMD Class of 2017, received the **Judah Folkman Prize for Clinical and Translational Science Research.** Baker presented his project, "Opioid Prescribing Following the Extraction of Teeth." Baker's research mentors are Drs. Terry Avorn and Brian Bateman in the Division of Pharmoeconomics and Pharmoeconomics in

the Department of Medicine at Brigham and Women's Hospital. Baker accepted the award from Patricia D'Amore, PhD, the Charles L. Schepens Professor of Ophthalmology and director of research at the Schepens Eye Research Institute, who is also chair of the HMS Faculty Committee on Scholarship in Medicine.



**Taavish Sharma,** DMD Class of 2017, received the **Robert Ebert Prize for Health Care Delivery Research or Service.** Sharma presented his project, "Oral Health Knowledge and Behaviors of Latina Mothers—A Pilot Study." Sharma's research mentor is Dr. Tamanna Tiwari in the Center for Native American Oral Health at the University

of Colorado School of Public Health. Dr. Nina Anderson is Sharma's mentor at HSDM.

# HSDM Publications

## DEVELOPMENTAL BIOLOGY

Besschetnova T, Ichimura T, Katebi N, St Croix B, Bonventre J, Olsen BR. Regulatory mechanisms of anthrax toxin receptor 1-dependent vascular and connective tissue homeostasis. *Matrix Biology* 2015; Jan 5.

Gao S, Moreno M, Eliason S, Cao H, Li X, Yu W, Bidlack F, Margolis H, Baldini A, Amendt B. TBX1 protein interactions and microRNA-96-5p regulation controls cell proliferation during craniofacial and dental development: Implications for 22q11.2 deletion syndrome. *Human Molecular Genetics* 2015; Jan 2.

Hui T, Sørensen E, Rittling S. Osteopontin binding to the alpha integrin requires highest affinity integrin conformation, but is independent of post-translational modifications of osteopontin. *Matrix Biology* 2014; Nov 28.

Maserejian N. Possible association between dental sealants and urinary bisphenol a levels in children warrants additional biomonitoring and safety research. *Journal of Evidence Based Dental Practice* 2014;14(4):200-202.

Yalak G, Vogel V. Ectokinases as novel cancer markers and drug targets in cancer therapy. *Cancer Medicine* 2014; Dec 14.

## ORAL HEALTH POLICY AND EPIDEMIOLOGY

Agaku I, Obadan E, Odukoya O, Olufajo O. Tobacco-free schools as a core component of youth tobacco prevention programs: A secondary analysis of data from 43 countries. *European Journal of Public Health* 2014; Dec 8.

Agaku I, Olutola B, Adisa A, Obadan E, Vardavas C. Association between unmet dental needs and school absenteeism because of illness or injury among U.S. school children and adolescents aged 6-17years, 2011-2012. *Preventive Medicine* 2015; Jan 6.

Isong I, Dantas L, Gerard M, Kuhlthau K. Oral health disparities and unmet dental needs among preschool children in Chelsea, MA: Exploring mechanisms, defining solutions. *Journal of Oral Hygiene Health* 2014; 2.

Seymour B, Barrow J. A historical and undergraduate context to inform interprofessional education for global health. *Journal of Law and Medical Ethics* 2014;42 Suppl 2:9-16.

Seymour B, Getman R, Saraf A, Zhang L, Kalenderian E. When advocacy obscures accuracy online: Digital pandemics of public health misinformation through an antifructose case study. *American Journal of Public Health* 2015 Jan 20:e1-e7.

## ORAL AND MAXILLOFACIAL SURGERY

Geary S, Selvi F, Chuang S, August M. Identifying dental panoramic radiograph features for the screening of low bone mass in postmenopausal women. *International Journal of Oral and Maxillofacial Surgery* 2014; Dec 2.

Inverso G, Mahal B, Aizer A, Donoff RB, Chau N, Haddad R. Marital status and head and neck cancer outcomes. *Cancer* 2014; Dec 18.

Pace C, Hwang K, Papadaki M, Troulis M. Interventional sialoendoscopy for treatment of obstructive sialadenitis. *Journal of Oral and Maxillofacial Surgery* 2014;72(11):2157-2166.

## RESTORATIVE DENTISTRY AND BIOMATERIALS SCIENCES

Park S, Kim A, Kristiansen J, Karimbux N. The influence of examiner type on dental students' OSCE scores. *Journal of Dental Education* 2015;79(1):89-94.

Shin J, Kinnunen T, Zarchy M, Da Silva JD, Chang B, Wright R. Dental students' perceptions of and experiences with prosthodontics: Ten graduating classes at one institution. *Journal of Dental Education* 2015;79(1):25-32.

## MULTI-DEPARTMENT

Allareddy V, Rampa S, Masoud M, Lee M, Nalliah R, Allareddy V. Overview of registered studies in orthodontics: Evaluation of the ClinicalTrials.gov registry. *American Journal of Orthodontics and Dentofacial Orthopedics* 2014;146(5):587-593.

Allareddy V, Venugopalan S, Eswaran S, Rampa S, Anamali S, Nalliah R, Shin K, Allareddy V, Elangovan S. Important impact of gingival and periodontal conditions on outcomes in SCT recipients. *Bone Marrow Transplantation* 2014; Jan 19.

Donoff RB, McDonough J, Riedy C. Integrating oral and general health care. *New England Journal of Medicine* 2014;371(24):2247-2249.

Floam S, Simpson N, Nemeth E, Scott-Sutherland J, Gautam S, Haack M. Sleep characteristics as predictor variables of stress systems markers in insomnia disorder. *Journal of Sleep Research* 2014; Dec 18.

Junker J, Lee C, Samaan S, Hackl F, Kiwanuka E, Minasian R, Tsai D, Tracy L, Onderdonk A, Eriksson E, Caterson E. Topical delivery of ultrahigh concentrations of gentamicin is highly effective in reducing bacterial levels in infected porcine full-thickness wounds. *Plastic and Reconstructive Surgery*. 2015;135(1):151-159.

Nalliah R, Allareddy V. Weakest students benefit most from a customized educational experience for Generation Y students. *PeerJ* 2014;2:e682.

Park S, Kim A, Kristiansen J, Karimbux N. The influence of examiner type on dental students' OSCE scores. *Journal of Dental Education* 2015;79(1):89-94.

## ORAL MEDICINE, INFECTION, AND IMMUNITY

Dewhirst F, Klein E, Bennett M, Croft J, Harris S, Marshall-Jones Z. The feline oral microbiome: A provisional 16S rRNA gene based taxonomy with full-length reference sequences. *Veterinary Microbiology* 2014; Dec 2.

Hartman M, Goodson J, Barake R, Alsmadi O, Al-Mutawa S, Ariga J, Soparkar P, Behbehani J, Behbehani K, Welty F. Salivary glucose concentration exhibits threshold kinetics in normal-weight, overweight, and obese children. *Diabetes Metabolic Syndrome and Obesity* 2014;8:9-15.

Herrera B, Hasturk H, Kantarci A, Freire M, Nguyen O, Kansal S, Van Dyke T. The impact of resolvin E1 on murine neutrophil phagocytosis in type 2 diabetes. *Infection and Immunity* 2014; pii: IAI.02444-14.

Hirschfeld J, Kawai T. Oral inflammation and bacteremia: Implications for chronic and acute systemic diseases involving major organs. *Cardiovascular and Hematological Disorders-Drug Targets* 2015; Jan 7.

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## A publication of the Harvard School of Dental Medicine Office of Research

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# HSDM Publications

ORAL MEDICINE, INFECTION, AND IMMUNITY (continued)

Intini G, Nyman J. Dkk1 haploinsufficiency requires expression of Bmp2 for bone anabolic activity. *Bone* 2015; Jan 17.

Kuten-Shorrer M, Woo SB, Treister N. Oral graft-versus-host disease. *Dental Clinics of North America* 2014;58(2):351-368.

Lee C, Chang P, Touchan N, Royzman D. Root coverage with a modified laterally positioned flap combined with a subepithelial connective tissue graft in advanced recession. *Journal of Periodontal Implant Science* 2014;44(6):300-306.

Massimo S, Benigi M, Al Hezaimi K, Kim D. Early bone formation adjacent to oxidized and machined implant surfaces: a histologic study. *International Journal of Periodontics and Restorative Dentistry* 2015;35:9-17.

Park W, Park Y, Park H, Yoo S, Chung S, Han J, Kim S, Kim D. A 10-year retrospective radiographic study of implantium dental implants. *International Journal of Periodontics and Restorative Dentistry* 2015;35:49-54.

Saez B, Ferraro F, Yusuf R, Cook C, Yu V, Pardo-Saganta A, Sykes S, Palchoudhuri R, Schajnovitz A, Lotinun S, Lymperi S, Mendez-Ferrer S, Toro R, Day R, Vasic R, Acharya SS, Baron R, Lin C, Yamaguchi Y, Wagers A, Scadden D. Inhibiting stromal cell heparan sulfate synthesis improves stem cell mobilization. *Blood* 2014;124(19):2937-2947.

Tian L, Sato T, Niwa K, Kawase M, Tanner A, Takahashi N. Rapid and sensitive PCR-dipstick DNA chromatography for multiplex analysis of the oral microbiota. *BioMed Research International* 2014; 2014:180323.

Villa A, Aboalela A, Luskin K, Cutler C, Sonis S, Woo SB, Peterson D, Treister N. mTOR Inhibitor-associated stomatitis in hematopoietic stem cell transplant patients receiving sirolimus prophylaxis for graft-versus-host disease. *Biology of Blood and Marrow Transplantation* 2014; Dec 5.

Villa A, Gohel A. Oral potentially malignant disorders in a large dental population. *Journal of Applied Oral Science* 2014;22(6):473-6.

Woo SB, Grammer R, Lerman M. Keratosis of unknown significance and leukoplakia: A preliminary study. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology* 2014;118(6):713-24.

Yuan A, Woo SB. Adverse drug events in the oral cavity. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology* 2014; Sept.

## Yi Chen, Visiting Scholar



Yi Chen is a DMD/PhD candidate, majoring in orthodontics, at West China School of Stomatology of Sichuan University. Chen finished her DMD training in 2014, and is pursuing her PhD. She currently is working in Dr. Yefu Li's Lab studying the development of articular cartilage.

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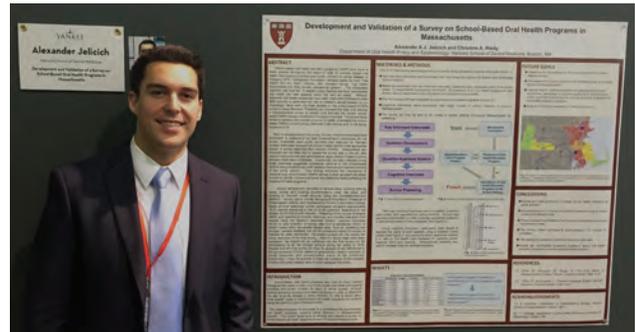
## Michael Sunwoo Receives 1st Place at Yankee Dental



**Michael Sunwoo, DMD**, (MMSc Class of 2015), presented his research, "Using Triggers to Document Orthodontic Adverse Events in the Academic Setting." **Congratulations to Dr. Sunwoo for receiving first place in the Graduate Student Poster Competition.** Dr. Sunwoo worked with Drs. Mohamed Masoud, Peter Chen, Alfa

Ibrahim Yansane and Elsbeth Kalendarian on this project.

**Alexander Jelich** (DMD Class of 2017), presented his research, "Development and Validation of a Survey on School-Based Oral Health Programs in Massachusetts."



**Waeil Elmisalati, DMD**, (MMSc Class of 2015), presented his research, "Evaluation of Renal Calcium and Phosphate Handling in the Prx1- Cre; Kl fl/fl Mouse Model."

## The Legacy of Dr. Anne Haffajee Symposium

Prior to the HSDM/Forsyth reception at IADR, please join colleagues for a Symposium, *Clinical Impact of Periodontal Research: The Legacy of Anne Haffajee* at 3:30pm on March 13 at the Hynes Convention Center. Many advances in the field of clinical aperiodontology were led by the seminal contributions of the late Anne Haffajee. This Symposium will highlight Haffajee's trajectory and major scientific accomplishments, as well as feature talks by colleagues, former students, as well as experts in the field of periodontology. Following the Symposium is the HSDM/Forsyth Reception from 5:45-7:30 pm at the Sheraton Republic Ballroom at 39 Dalton Street in Boston.