



2016 HSDM Innovation Awards



Alessandro Villa, DDS, PhD, MPH, instructor in oral medicine, infection and immunity, received an award for, “Development of a new mobile health application for dental students and residents’ evaluation.” Villa plans to use a Smartphone-based application (SIMPL) to optimize measurement of faculty guidance and dental student/resident autonomy. Entered data is collected in real-time, to demonstrate competence, achievement of educational milestones, accreditation standards, or for internal use by students, residents and faculty. As adoption of this application increases, new opportunities will emerge for ‘horizontal’ integration, in which SIMPL will offer an easy and efficient delivery mechanism for new assessment tools deemed valuable to dental educators Villa will collaborate with researchers from HSDM, BWH, MGH, and the Harborview Medical Center in Seattle.



Rosalyn Sulyanto, DMD, instructor in developmental biology, received an award for, “Pediatric oral microbiome in health and disease.” Sulyanto plans to investigate the acquisition of the human oral microbiome in children ages 0 to 5 years and how it is altered in children with early childhood caries. This study also examines the effect of 0.4% stannous fluoride gel and 38% silver diamine fluoride treatments on the clinical outcomes and microbial community profile of carious lesions in children. Sulyanto will collaborate with Dr. Man Wai Ng (HSDM/Boston Children’s Hospital), Dr. Ann Griffen (The Ohio State University), and Dr. Chris Goodell (HSDM/Boston Children’s Hospital).



Lisa Simon, DMD, instructor in oral health policy and epidemiology, received an award for, “Providing preventive periodontal treatment to hospitalized patients with diabetes,” and her co-investigator is Dr. Matthew Tobey at MGH. This study will be assessing the impact of providing dental hygiene treatment to hospitalized diabetic patients. Simon and Tobey will be assessing patient outcomes and healthcare costs and provider oral health knowledge and comfort with interprofessional practice. The inpatient setting, where patients are already receiving services from multiple disciplines and do not need to travel to see a healthcare provider, presents a unique opportunity to make integrative oral healthcare services accessible to diabetic patients.



Jason Lee, DMD, instructor in restorative dentistry and biomaterials sciences, received an award for, “The virtual patient project,” and his co-investigator is Dr. German Gallucci. This project is the development of a 4D virtual patient model in which the facial skeleton, intraoral and extraoral soft tissues, and dentition are integrated together with the functional movements of the mandible and facial soft tissues. This will allow for an anatomically comprehensive virtual patient model that can replicate dynamic movements in real time conditions. Lee and Gallucci seek to develop and streamline a process to capture and consolidate these discrete data sets into a single model.



Biological Sciences in Dental Medicine PhD Program

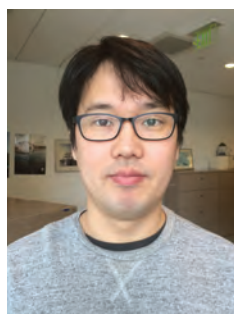
Dr. Jin Hao will matriculate into the BSDM PhD Program this August. Hao, from Chengdu, China, received his MS and DMD from Shichuan University. He is currently conducting research on stem cell biology and dental tissue regeneration at the State Key Laboratory at the West China School of Stomatology. Hao will join current BSDM students, Yi-fan Zhang, Erica Shapiro,* Golnaz Morad, Christine Min,* Elizabeth Perry,* and Laurel Fuentes.* After 15-years of serving as BSDM Program Director, Dr. Bjorn R. Olsen will step down this July and Dr. Yingzi Yang, professor of developmental biology, will serve as his replacement.

* These students are enrolled in the combined DMD/PhD program at HSDM.

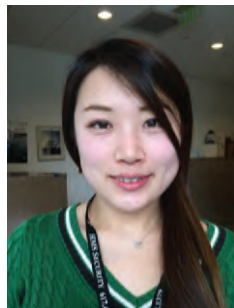
New Postdoctoral Fellows



Dr. Hanjun Kim, from Seoul, South Korea, joined the Yang Lab as a postdoctoral fellow. Kim received his PhD in life sciences from the University of Seoul. In the Yang Lab, he is working to understand the role of noncanonical Wnt signaling pathway in bone development.

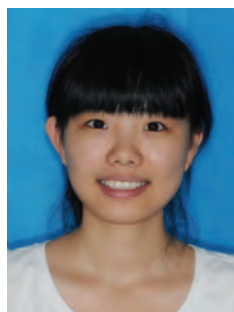


Dr. Wan Tae Kim, also from Seoul, South Korea, joined the Yang Lab as a postdoctoral fellow. Kim received his PhD in biology from the University of Seoul. In the Yang Lab, he is working on liver tumorigenesis.



Dr. Shiho Sugawara, from Morioka Iwate, Japan, joined the Nagai Lab as a postdoctoral fellow. Sugawara received her DDS from the Iwate Medical University, School of Dentistry where she worked in the Department of Prosthodontics and Oral

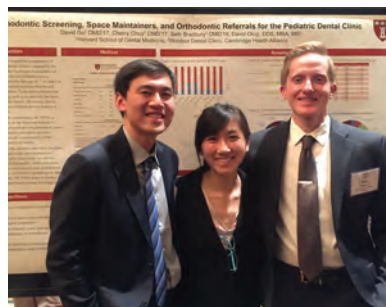
Implantology. In the Nagai Lab, she is working on the development of an innovative biomimetic surface for the integration of soft tissue with dental implants.



Dr. Xianrui (Sherry) Yang, from China, joined the Olsen Lab as a postdoctoral fellow. Yang received her MS and DDS from the West China School of Stomatology, Sichuan University. In the Olsen Lab, Yang is working on periodontal ligament cell

behavior and extracellular signaling under various conditions in mice.

HSDM Represented



HSDM Students, David Gu DMD 2017, Cherry Choy DMD 2017, and Seth Bradbury

DMD 2018, (photographed left to right), were selected to present their project, "Orthodontic screening, space maintainers, and orthodontic referrals for the pediatric dental clinic" at the Society of Student Run Free Clinics National Conference. Due to lack of access to care, many children do not receive a proper orthodontic consult. Identifying this need, the student-run pediatric clinic at HSDM has developed and implemented a new orthodontic screening and aims to further expand the model of comprehensive care provided to patients.



Dr. Beate Lanske, Professor of Oral Medicine, Infection and Immunity, and member of the Executive Committee of the American Society for Bone and Mineral Research, lobbying Congress for increased federal funding for research.



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Awards/Recognition



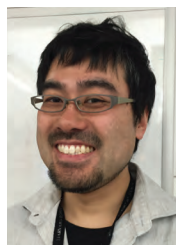
Dr. Shigemi Nagai, associate professor of restorative dentistry and biomaterials sciences, and director of clinical research at HSDM, received a research grant from Benco Dental Supply Company for her project, “Quantitative assessment of efficacy of the new PRO-SYS toothbrush.” George Chen and Jie Sun, DMD 2017, and Sara Rosenburg, DMD 2018, will be working with Dr. Nagai on this study.



Dr. Jovana Kaludjerovic, postdoctoral fellow in the Lanske Lab, was selected to present her research, “Parathyroid gland specific deletion of FGFR2 attenuates development of parathyroid gland hyperplasia in hypocalcemic mice,” at the 2016 Endocrine Society Annual Meeting in Boston on April 1-4, 2016.



Dr. Ye Fan, postdoctoral fellow in the Lanske Lab, was also selected to present at the 2016 Endocrine Society Annual Meeting for her research, “Regulation of mesenchymal cell fate and bone resorption by PTH1R.” Dr. Fan also received the John Haddad Young Investigator Award to present her research at The American Society for Bone and Mineral Research Young Investigator’s Meeting in Denver, Colorado on March 27-31, 2016.



Dr. Toshi Sato, postdoctoral fellow in the Lanske Lab, was selected to present his research, “Transcriptome analysis of parathyroid glands of CYP27B1 knockout mice,” at the 19th Annual Vitamin D Workshop in Boston on March 29-31, 2016.

HSDM Publications

MULTI-DEPARTMENTAL

Lee C, Chen Y, Starr J, Chuang S. Survival analysis of wide dental implant: systematic review and meta-analysis. *Clinical Oral Implants Research* 2015; Dec 25.

Simon L, Friedland B. Interstate practice of dental teleradiology in the United States: The effect of licensing requirements on oral and maxillofacial radiologists’ practice patterns. *Telemedicine Journal of E-Health* 2015; Dec 22.

Simon L, Hum L, Nalliah R. Access to interpreter services at U.S. dental school clinics. *Journal of Dental Education* 2016;80(1):51-57.

ORAL HEALTH POLICY AND EPIDEMIOLOGY

Bhardwaj A, Ramoni R, Kalenderian E, Neumann A, Hebbali N, White J, McClellan L, Walji M. Measuring up: Implementing a dental quality measure in the electronic health record context. *Journal of the American Dental Association* 2016;147(1):35-40.

Gahl W, Mulvihill J, Toro C, Markello T, Wise A, Ramoni R, Adams D, Tift C; for Members of the UDN. The NIH Undiagnosed Diseases Program and Network: Applications to modern medicine. *Molecular Genetics and Metabolism* 2016; Jan 22.

ORAL AND MAXILLOFACIAL SURGERY

Dentino K, Marrinan E, Brustowicz K, Mulliken J, Padwa B. Pharyngeal flap is effective treatment for post maxillary advancement velopharyngeal insufficiency in patients with repaired cleft lip and palate. *Journal of Oral and Maxillofacial Surgery* 2016; Jan 7.

Dentino K, Sierra-Vasquez D, Padwa B. Inferior turbinate asymmetry is a feature of the unilateral complete cleft lip and palate nasal deformity *Journal of Oral and Maxillofacial Surgery* 2015; Oct 3.

Glowacki J. Demineralized bone and BMPs: Basic science and clinical utility. *Journal of Oral and Maxillofacial Surgery* 2015;73(12S):S126-31.

Inverso G, Mahal B, Aizer A, Donoff R, Chuang S. Health insurance affects head and neck cancer treatment patterns and outcomes. *Journal of Oral and Maxillofacial Surgery* 2016; Jan 8.

Kufta K, Peacock Z, Chuang S, Inverso G, Levin L. Components of patient satisfaction after orthognathic surgery. *Journal of Craniofacial Surgery* 2015; Dec 16.

Palla B, Burian E, Klecker J, Fliefel R, Otto S. Systematic review of oral ulceration with bone sequestration. *Journal of Craniomaxillofacial Surgery* 2015; Dec 22.

Resnick C, Dentino K, Garza R, Padwa B. A management strategy for idiopathic bone cavities of the jaws. *Journal of Oral and Maxillofacial Surgery* 2016; Jan 7.

RESTORATIVE DENTISTRY AND BIOMATERIALS SCIENCES

Alqaderi H, Lee C, Borzangy S, Pagonis T. Coronal pulpotomy for cariously exposed permanent posterior teeth with closed apices: A systematic review and meta-analysis. *Journal of Dental Research* 2015; Dec 10.

Koch G, Gallucci G, Lee S. Accuracy in the digital workflow: From data acquisition to the digitally milled cast. *Journal of Prosthetic Dentistry* 2016; Jan 21.

continued on page 4

DEVELOPMENTAL BIOLOGY

Agarwal S, Loder S, Brownley C, Cholak D, Mangiavini L, Li J, Breuler C, Sung H, Li S, Ranganathan K, Peterson J, Tompkins R, Herndon D, Xiao W, Jumlongras D, Olsen BR, Davis T, Mishina Y, Schipani E, Levi B. Inhibition of Hif1 α prevents both trauma-induced and genetic heterotopic ossification. *Proceedings of the National Academy of Sciences* 2015; Dec 31.

Hu K, Olsen BR. Osteoblast-derived VEGF regulates osteoblast differentiation and bone formation during bone repair. *Journal of Clinical Investigation* 2016;126(2):509-26.

Oishi H, Martinu T, Sato M, Matsuda Y, Hirayama S, Juvet S, Guan Z, Saito T, Cypel M, Hwang D, Keller T, Whitman M, Liu M, Keshavjee S. Halofuginone treatment reduces interleukin-17A and ameliorates features of chronic lung allograft dysfunction in a mouse orthotopic lung transplant model. *Journal of Heart and Lung Transplantation* 2015; Dec 10.

Su Y, Chung R, Ruan C, Chim S, Kuek V, Dwivedi P, Hassanshahi M, Chen K, Xie Y, Chen L, Foster B, Rosen V, Zhou X, Xu J, Xian C. Neurotrophin-3 induces BMP-2 and VEGF activities and promotes the bony repair of injured growth plate cartilage and bone in rats. *JBMR* 2016; Jan 13.

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ORAL MEDICINE, INFECTION AND IMMUNITY

Agarwal S, Loder S, Brownley C, Cholak D, Mangiavini L, Li J, Breuler C, Sung H, Li S, Zamakhchari M, Sima C, Sama K, Fine N, Glogauer M, Van Dyke T, Gyrko R. Lack of p47phox in akita diabetic mice is associated with interstitial pneumonia, fibrosis, and oral inflammation. *American Journal of Pathology* 2015; Dec 30.

Amano K, Densmore M, Fan Y, Lanske B. Ihh and PTH1R signaling in limb mesenchyme is required for proper segmentation and subsequent formation and growth of digit bones. *Bone* 2016;83:256-6.

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Belström D, Holmström P, Fiehn N, Rosing K, Bardow A, Paster B, Lynge Pedersen A. Bacterial composition in whole saliva from patients with severe hyposalivation- a case-control study. *Oral Diseases* 2016; Jan 29.

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Faibish D, Suzuki M, Bartlett J. Appropriate real-time PCR reference genes for fluoride treatment studies performed in vitro or in vivo. *Archives In Oral Biology* 2015;62:33-42.

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Lewiecki E, Baron R, Bilezikian J, Gagel R, Leonard M, Leslie W, McClung M, Miller P. Proceedings of the 2015 Santa Fe Bone Symposium: Clinical applications of scientific advances in osteoporosis and metabolic bone disease. *Journal of Clinical Densitometry* 2015; Dec 29.

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