



ANNUAL LECTURE

Harvard School of Dental Medicine honors Dr. Paul Goldhaber, an outstanding researcher and clinician in medicine and dentistry, and one of the longest-serving Deans at Harvard with an annual lectureship. Dr. Goldhaber's greatest accomplishment as Dean and Professor was the number of students who became deans and/or assumed leadership positions at academic institutions around the world. The Goldhaber Award, HSDM's highest honor, goes to a recipient who is held in the highest international esteem in his or her field relating to oral and systemic health. The award was established in 1989 to honor Dr. Paul Goldhaber, a periodontist and researcher, upon the completion of his 22 years as dean.

SELECTION COMMITTEE

Dr. Bjorn R. Olsen (Chair), Professor of Developmental Biology at HSDM

Dr. Hugh Devlin, Professor of Restorative Dentistry at Manchester Institute for Collaborative Research on Aging

Dr. German Gallucci, Associate Professor and Chair of Restorative Dentistry and Biomaterials Sciences at HSDM

Dr. Anne Marie Kuijpers-Jagtman, Senior Scientist, Professor Emeritus, Universität Bern and University Medical Center Groningen

Dr. Laurie McCauley, Professor of Periodontics, Professor of Dentistry, Dean of the School of Dentistry at the University of Michigan

Dr. Masaki Noda, Professor of Department of Molecular Pharmacology at Tokyo Medical and Dental University

Dr. Paul Sharpe, Professor of Craniofacial Biology, Head of the Centre for Craniofacial & Regenerative Biology at King's College

Dr. Yingzi Yang, Professor of Developmental Biology and Dean for Research at HSDM

2021 AWARDEE



Ichiro Nishimura, DDS, DMSc, DMD, FAP. Dr. Nishimura received his clinical training from Tokyo Dental College (DDS, 1981) and Harvard School of Dental Medicine (DMD, 1993). He received the DMSc and Prosthodontics' Specialty Certificate from Harvard in 1986, when Dr. Goldhaber was the Dean. He started tissue regeneration and biotechnology research in the Olsen Lab in 1989. He served as Director of the Harvard-MIT Biomaterials Graduate Program (1993-1995) and Director of the Predoctoral Research Program of the Harvard School of Dental Medicine (1995-1997). In 1997 he joined UCLA and established the Weintraub Center for Reconstructive Biotechnology, supported by the National Center for Research Resources/NIH and philanthropic contributions from the Weintraub Family. His current administrative efforts include co-director of Neuro Engineering and the development of early translational research programs through UC BRAID Drug Discovery Alliance. He has served as a reviewing consultant for NIH, NFS, Biotechnology and Biological Sciences Research Council (UK)

and Christian Doppler Forschungsgesellschaft in Austria. He received scientific/ academic awards including **Distinguished Faculty Award** (Harvard 1993), **Distinguished Service Award** (American Association for Dental Research, 1999), **Appreciation of Services** (US Department of Health & Human Services, 2000 and 2005), **Distinguished Alumnus Award** (Harvard School of Dental Medicine, 2018). He is an elected Fellow of Academy of Prosthodontics (2000) and American Association for Advancement of Science (AAAS, 2017). His current research is on rare diseases of bone, skin, oral mucosa and facial nerves, using small animal models and bio/nanotechnology for drug discovery and delivery. Lastly, Dr. Nishimura has a large number of important published manuscripts, including the discovery (when Dr. Goldhaber was the Dean) that tissue-specific forms of type IX collagen-proteoglycan arise from the use of two widely separated promoters.

RELEVANT PUBLICATIONS

Below are just some of the relevant publications with **Dr. Ichiro Nishimura as the last author**. There are a large number of publications with Ichiro Nishimura as the first author, as well as publications going back to the time when he was a student at HSDM when Dr. Paul Goldhaber was the Dean.

- Hassan N, McCarville K, Morinaga K, Mengatto CM, Langfelder P, Hokugo A, Tahara Y, Colwell CS, Nishimura I. Titanium biomaterials with complex surfaces induced aberrant peripheral circadian rhythms in bone marrow mesenchymal stromal cells. *PLoS One* 2017 Aug 17;12(8):e0183359.
- Morinaga K, Sasaki H, Park S, Hokugo A, Okawa H, Tahara Y, Colwell CS, Nishimura I. Neuronal PAS domain 2 (Npas2) facilitated osseointegration of titanium implant with rough surface through a neuroskeletal mechanism. *Biomaterials* 2019 Feb;192:62-74.
- Sun Y, Kaur K, Kanayama K, Morinaga K, Park S, Hokugo A, Kozłowska A, McBride WH, Li J, Jewett A, Nishimura I. Plasticity of myeloid cells during oral barrier wound healing and the development of bisphosphonate-related osteonecrosis of the jaw. *Journal of Biological Chemistry* 2016 Sep 23;291(39):20602-16.
- Park S, Kanayama K, Kaur K, Tseng HC, Banankhah S, Quje DT, Sayre JW, Jewett A, Nishimura I. Osteonecrosis of the jaw developed in mice: Disease variants regulated by $\gamma\delta$ T cells in oral mucosal barrier immunity. *Journal of Biological Chemistry* 2015 Jul 10;290(28):17349-66.
- Sasaki H, Hokugo A, Wang L, Morinaga K, Ngo JT, Okawa H, Nishimura I. Neuronal PAS domain 2 (Npas2)-deficient fibroblasts accelerate skin wound healing and dermal collagen reconstruction. *Anatomical Record (Hoboken)* 2020 Jun;303(6):1630-1641.
- Arzi B, Moshaverinia A, Verstraete FJM, Fiani N, Nishimura I. Craniomaxillofacial disorders and solutions in humans and animals. *Journal of Dental Research* 2018 Apr;97(4):364-370.
- Lin A, Hokugo A, Nishimura I. Wound closure and wound management: A new therapeutic molecular target. *Cell Adhesion and Migration* 2010 Jul-Sep;4(3):396-9.
- Pezzotti G, Asai T, Adachi T, Ohgitani E, Yamamoto T, Kanamura N, Boschetto F, Zhu W, Zanocco M, Marin E, Bal BS, McEntire BJ, Makimura K, Mazda O, Nishimura I. Antifungal activity of polymethyl methacrylate/Si₃N₄ composites against *Candida albicans*. *Acta Biomaterials* 2021 May;126:259-276.
- Hasiakos S, Gwack Y, Kang M, Nishimura I. Calcium signaling in T cells and chronic inflammatory disorders of the oral cavity. *Journal of Dental Research* 2021 Jul;100(7):693-699
- Adachi T, Boschetto F, Miyamoto N, Yamamoto T, Marin E, Zhu W, Kanamura N, Tahara Y, Akiyoshi K, Mazda O, Nishimura I, Pezzotti G. In vivo regeneration of large bone defects by cross-linked porous hydrogel: A pilot study in mice combining micro tomography, histological analyses, raman spectroscopy and synchrotron infrared imaging. *Materials (Basel)* 2020 Sep 25;13(19):4275.
- Mitoh A, Suebe Y, Kashima T, Koyabu E, Sobu E, Okamoto E, Mitamura Y, Nishimura I. Shear stress evaluation on blood cells using computational fluid dynamics. *Bio-Medical Materials and Engineering* 2020;31(3):169-178.
- Okawa H, Egusa H, Nishimura I. Implications of the circadian clock in implant dentistry. *Dental Materials Journal* 2020 Mar 31;39(2):173-180.
- Hokugo A, Kanayama K, Sun S, Morinaga K, Sun Y, Wu Q, Sasaki H, Okawa H, Evans C, Ebetino FH, Lundy MW, Sadrerafi K, McKenna CE, Nishimura I. Rescue bisphosphonate treatment of alveolar bone improves extraction socket healing and reduces osteonecrosis in zoledronate-treated mice. *Bone* 2019 Jun;123:115-128.