

transforming

Harvard School of Dental Medicine

2014 Dean's Report



HARVARD
School of Dental Medicine



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Enter into a
community
that is
transforming
dental
medicine.

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DENTAL MEDICINE
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Our Vision

HARVARD SCHOOL OF DENTAL MEDICINE (HSDM) has always promoted the belief that dentistry is a branch of medicine. The President of Harvard University grants the DMD degree by welcoming our graduates into this demanding branch of medicine at commencement. It then raises the question: Why is it so difficult to convince our profession that we are a part of overall health care? We are determined to change that perspective and this is why we recently updated our mission and vision statements. These inform and direct our strategic plan and our educational programs. The most important and transformational aspects of these changes is the emphasis on reuniting the mouth with the rest of the body.

The **updated mission statement** of HSDM is to develop and foster a community of global leaders dedicated to improving human health by integrating dentistry and medicine at the forefront of education, research, and patient care.

The **updated vision statement** of HSDM is to transform dentistry by removing the distinction between oral and systemic health.

The HSDM initiatives highlighted in this 2014 Dean's Report are transforming dental education, research, and patient care. I am so proud of what our faculty, students, and staff do, but they could not do it without the support of all our alumni, friends, and benefactors. I tell new students that they are entering a program of learning that is exceptional but provides opportunities for growth and development beyond the usual dental applicant's vision.

"HSDM is a special place that offers rigor, but flexibility; focus, with opportunity."

—Dean Bruce Donoff

HSDM is leading the world in the way oral health is practiced and our programs reflect this. New methods of delivering oral health care are taught along with CAD/CAM dentistry and many of our scientific advances can be attributed to a long existing research requirement. We continue to grow by developing more multiple, joint degree programs and increasing our emphasis on population health, global oral health and geriatric oral health.

In October 2014, we hosted our sixth Leadership Forum highlighting the evidence that good oral health improves general health and also reduces overall medical costs. "Put Your Money Where Your Mouth Is: The Economic Imperative of Oral Health" was a much-talked about event that will be highlighted in future issues of the *Harvard Dental Bulletin*.

I frequently call HSDM a special place and it has earned this distinction because of our outstanding faculty, students, staff and the many local supporters who share our values and who are dedicated to our mission. Thank you.

Yours truly;



R. Bruce Donoff, DMD67, MD73

Dean and Walter C. Guralnick Distinguished Professor of Oral and Maxillofacial Surgery
2014 Shils-Meskin awardee for leadership in the dental profession

Transforming Our Vision

HSDM is shaping the future of dentistry. It is no small task and requires innovative solutions to complex issues and opportunities. It also requires visionary leadership, astute management, and a wide array of skills, talents, and resources—all working collaboratively. The four deans we profile here possess these qualities. They are in the vanguard of the evolution in dentistry, inspiring and motivating their teams and leading their departments in new, challenging, and exciting directions. Working together, they connect these elements into the strong matrix necessary to support the overall goals of the School.

John D. Da Silva Vice Dean



The integration of general medicine and oral health care is an essential public-health strategy.

Dr. Da Silva furthers the transformation of HSDM through his work on health policy, administration, leadership, and curriculum development.

Dr. Da Silva focuses on improving the way faculty see themselves and the value of their

work and encourages faculty to take leadership roles in professional societies. He continues to make important contributions to bone regeneration and the application of color science to implants. He has a keen interest in public health issues and has done pioneering work in developing curricula that incorporates substance-abuse screening for at-risk adolescents.

Dr. Da Silva was appointed vice dean of HSDM in 2014, having served in numerous posts at the School, including chair of the Department of Restorative Dentistry and Biomaterials Sciences and medical director, Harvard Dental Center.

Charles Frizzell Dean of Administration and Finance



My role is to ensure that critical business functions—IT, finance, operations, facilities, equipment, and other resources— are in place to support the School's mission.

HSDM is transforming dental research and patient care by developing a visionary yet disciplined administrative function.

A few examples: progressive research requires new state-of-the-art equipment and advanced technology—both in terms of IT and dental materials—and new energy-efficient

facilities. All of these, and more, fall to Dean Frizzell and his department.

In light of cutbacks in federal funding, careful budget management is also key. Dean Frizzell ensures careful stewardship of the School's financial resources and he works closely with Harvard Medical School to advance the concept and practice of blended learning as well as shared resources. Dean Frizzell is also committed to increasing the level of financial aid available to prospective students.

Bjorn R. Olsen Dean of Research



Our research aims to set the international standard and pace for basic discoveries, clinical application, and research training in dental medicine and beyond.

Dr. Olsen is dean for research, professor of developmental biology, and Hersey Professor of Cell Biology at Harvard Medical School. Dr. Olsen has made major contributions to the fields of extracellular matrix biology, genetics, and cell/developmental biology.

Asked by Dean Donoff to establish an oral and developmental biology department, Dr. Olsen moved his research lab from Harvard Medical School to HSDM, where he has developed a robust research program. The application of HSDM's advances in cellular biology and bone regeneration research have profound implications for both dentistry and overall medical issues such as osteoporosis and joint replacement, as well as influencing pharmacology and health policy.

The recipient of many international honors for his research, Dr. Olsen is a contributor to several professional journals and is editor-in-chief of *Matrix Biology*.

Nancy L. Jones Associate Dean of Development and Alumni Relations



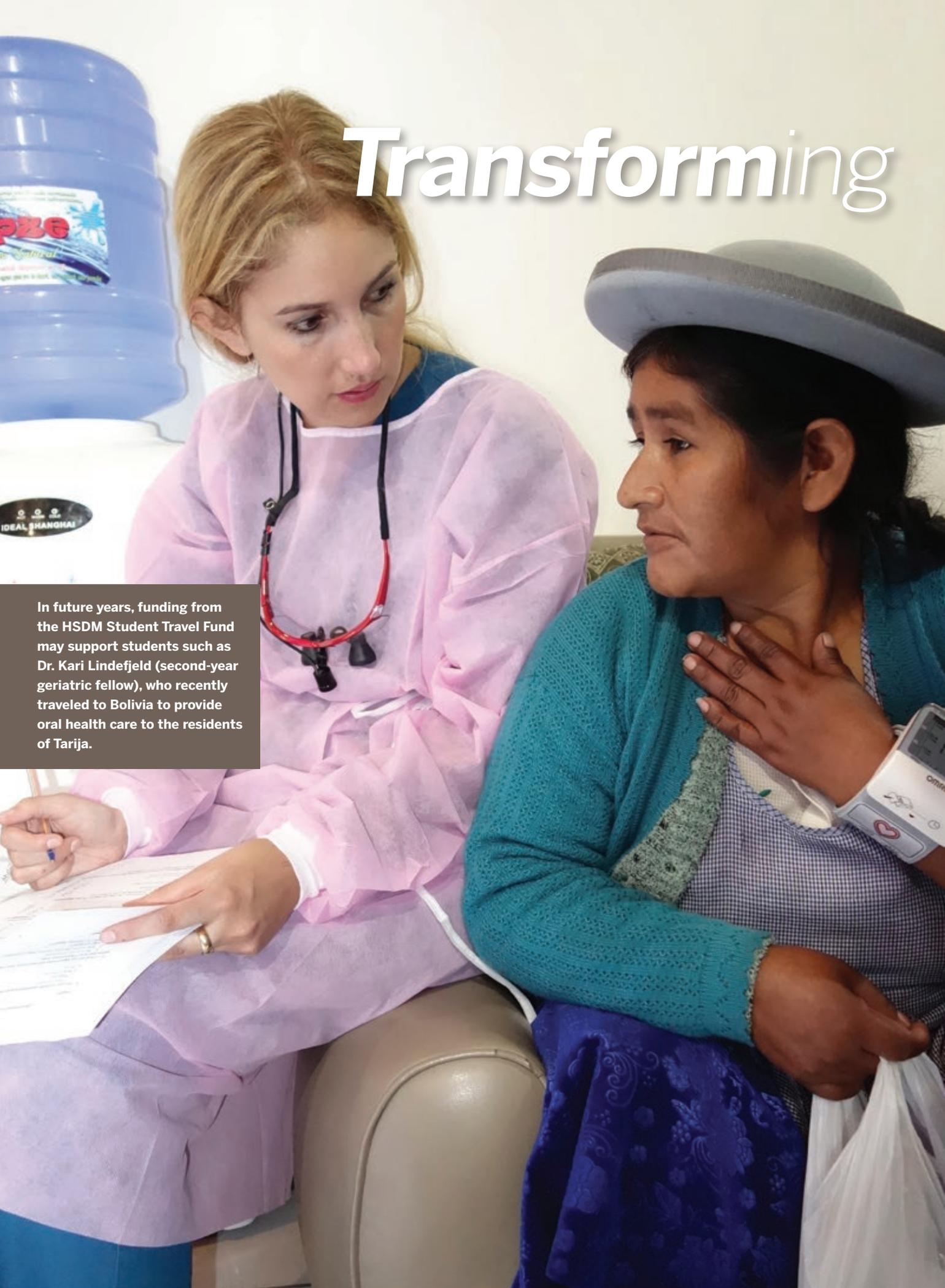
Involvement with HSDM doesn't end upon graduation—in fact, it is just the beginning of a long and mutually beneficial association.

Dean Jones wasted no time when she joined HSDM in April 2014 with a background in fundraising and communications. She knows that providing innovative opportunities for alumni and donor engagement is essential to the ongoing evolution and sustainability of the

School. To that end, her office focuses on strengthening alumni relations, increasing corporate and foundation giving, and redefining the communications strategy with updated technology and materials including a new HSDM website (scheduled to launch in mid-2015).

Dean Jones is enthused about the new website's potential to transform HSDM's brand, re-engage alumni, showcase HSDM's talented faculty and innovative research, as well as focus on increasing funding for global and community health initiatives.

Transforming



In future years, funding from the HSDM Student Travel Fund may support students such as Dr. Kari Lindefeld (second-year geriatric fellow), who recently traveled to Bolivia to provide oral health care to the residents of Tarija.

the Future of Dentistry

LEON DOGON IS A professor in the Department of Restorative Dentistry and Biomaterials Sciences at HSDM. He has long been active in the development, evaluation, and testing of a wide range of polymeric materials for both preventive and restorative purposes. He has published extensively in journals on biomaterials research and preventive dentistry and is coeditor of the *Proceedings of the International Symposium on the Acid Etch Technique*.

However, Dr. Dogon's primary interest is in dentistry as it relates to public-health issues. A native of South Africa, he witnessed first-hand that country's disparities in health care. "Even now," he says, "too many people in South Africa have little or no access to oral disease prevention and care. That is the case in many countries, including here in the United States."

Since 1957, when he earned his first dental degree from the University of London, Dr. Dogon has devoted his career to expanding dental health care to underserved communities around the globe.

He had an early interest in China and traveled there for the first of many visits in 1979. During that time, there were few dental educa-

This year, with a generous gift, Dr. Dogon established the HSDM Student Travel Fund, eventually to be named the I. Leon Dogon Student Travel Fund when Dr. Dogon retires from the School. Fellowships will be available to students who wish to travel to a developing area to conduct research, train others, and/or provide clinical services.

tion resources in that country. That has changed, in part, because of Dr. Dogon's work. As a result of his contributions to curriculum development, Dr. Dogon has been granted honorary professorships at three of the five major dental schools in China. He served as Project Hope's director of the dental education program, based in large part on pioneering work he had done with underserved school populations in the Boston area. In Boston, he developed a sealant that could be applied by lay people who had little access to dental health practitioners. This was greeted with skepticism by some clinicians, but it proved successful by reducing dental problems.

Dr. Dogon also established numerous preventive programs in rural communities in Indonesia, Bosnia, Poland, Macedonia, and India.

"I've always wanted to work in areas where health care is not readily available to most people. My hope is that the HSDM Student Travel Fund will enable more students to experience first-hand how eye-opening and gratifying work in global and community health has become."

I. Leon Dogon, LDS, RCS, DMD63
Professor of Restorative Dentistry





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The Campaign for Harvard School of Dental Medicine SPOTLIGHT

Dr. Dogon has now made it possible for students to gain these enriching global experiences.

“I had originally intended to establish the fund last year, which was my 50th year teaching here. Then the Campaign came up, and it seemed appropriate to contribute during the Campaign, especially since one of HSDM’s priorities—global and community health—has been close to my heart my whole life.”

HSDM is immensely grateful for this generous gift, which will make it possible for students who share Dr. Dogon’s passion to experience dentistry in a global context and follow in the footsteps of one of the great leaders in dental public health.

“I would like to interest students into giving back. The whole idea of this fund is to excite students not only to prevent and treat, but to train practitioners in these under-resourced areas—and to make inroads that address the vast disparities in access to health services.”

Harvard University President and the Lincoln Professor of History Drew Gilpin Faust and Dean Bruce Donoff attended the April 24, 2014, Campaign kickoff event at the Downtown Harvard Club (Boston, Mass.).

Newly-Established Scholarships and/or Fellowships for The Campaign for Harvard School of Dental Medicine

HSDM Student Travel Fund

Lois K. Cohen Charitable
Remainder Unitrust for
Global Health

Keystone Dental Fellowship

MIS Implants Periodontology and
Implantology Fellowship

Strata Oral and Maxillofacial
Pathology Fellowship

Dr. Si Kon Lee Endowed
Scholarship

Campaign Committee

Jack Silversin, DMD72, MPH73,
DPH75, *Chair*

Reed Day, MD84, DMD85, PD90

Edward R. Mopsik, DMD67

Kimberly Ritrievi, PhD

Dean’s Scholars 2013-2014

The Dean’s Scholars program, established in 2002, provides financial support to bridge an individual’s move from postdoctoral study to faculty, allowing promising scholars time to develop and refine the skills necessary for academic success. The following were inducted as Dean’s Scholars for 2013–2014:



“Contributing to HSDM adds meaning to my life. I know the funds generated from this Campaign will help young researchers continue to make progress in a field that is very important to me: global dental health.”

—Jack Silversin

Campaign Chair Jack Silversin and Mary Jane Kornacki Support Global Oral Health

Jacob (Jack) Silversin, DMD72, MPH73, DPH75, is an assistant clinical professor of oral health policy and epidemiology at HSDM. He has long been dedicated to improving oral health in the developing world and in underserved communities. Dr. Silversin and his wife, Mary Jane Kornacki, provide consulting services to hospitals and group practices. They are pioneers in organizational development with a focus on aligning health professionals, managers, and administrators around a common vision to improve health outcomes. Dr. Silversin credits HSDM with making his unique career path possible—“My education opened doors; there’s no other way to put it.”

Jack Silversin and Mary Jane Kornacki established the Lois K. Cohen Charitable Remainder Unitrust, named for Lois K. Cohen, the mentor who encouraged him to pursue his contributions to global dental health. He’s also proud to serve as HSDM Campaign chair.

Campaign Priorities

Financial Assistance: **\$6 million**
 Global and Community Oral Health Programs: **\$2 million**



Mrs. Ethel Goldhaber and Samuel Z. Goldhaber were in attendance at the Campaign kickoff event.

Wei Huang

Role of LRP5 in retinal vascularization

Mentor: Bjorn R. Olsen

Anna Idelvich

The identification of AP-1 sensitive hypothalamic neuronal circuits and mediators that regulate energy metabolism and bone formation

Mentor: Roland Baron

Luke Mortensen

Prx1+ population of skeletal progenitor cells in adult mice and how they are involved and required for bone regeneration

Mentor: Giuseppe Intini

Serhan Zenger

Role of LRRK1 in osteoclast function

Mentor: Roland Baron

Transforming



HSDM students receive hours of simulation-based training in the preclinical learning center.

Presidential Scholars 2013-2014

The Presidential Scholars in Dental Medicine awards, funded by HSDM and the Office of the Harvard University President, provide significant financial support for individuals who are committed to public service through career pathways such as academic dentistry, research, leadership roles in public health or public policy, and a commitment to underserved populations or international health issues.

Dental Education

HSDM HAS BEEN TEACHING and mentoring students since its beginnings in 1867—the first dental school in the U.S. to be connected with a medical school and under the umbrella of a university. From its beginning, HSDM has distinguished itself by being in the vanguard of dental education. That legacy continues today.

Sang Park, DDS, MMSc01, PD01 (prosthodontics), is assistant dean of dental education and the director of the predoctoral curriculum. She is also an assistant professor in the Department of Restorative Dentistry and Biomaterials Sciences.

Dr. Park and her colleagues introduced an innovative “clinical case classification and completion” program at HSDM, whereby students are assigned cases to diagnose—and then design and follow treatment plans. Students are then evaluated on the completion of the treatment plans. That continuity of care will result in closer doctor-patient relationships and improved patient outcomes. How do students feel about this new approach? In a

“We are making a dramatic change by integrating student-centered learning and a comprehensive model that focuses on patient-centered care.”

—Dr. Sang Park

recent survey, ninety-four percent favored case completion over the traditional model.

Second, change is coming to the didactic courses at HSDM with the introduction of the “flipped classroom.” Dr. Park believes this blended-learning approach will engage students to become active, self-directed learners. HSDM is paving the way for a paradigm shift in dental education.

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“The case completion model instills in students a higher level of commitment to the patient. For the first time, students are encouraged to perform comprehensive care based on the needs of our patients. This is a major shift in the way we assess clinical education.”



Sang Park, DDS, MMSc01, PD01 (prosthodontics)
Assistant Dean of Dental Education

Rebecca Chen, DMSc 2015, orthodontics

Mindy Gil, DMD11, (DMSc 2015, periodontology)

Negin Katebi, DMSc 2016, orthodontics

Min Kyeong (Irene) Lee, DMD10, (DMSc14, orthodontics)

Chia-cheng Li, DMSc14, oral pathology

Marcelo Friere, DMSc 2016, periodontology

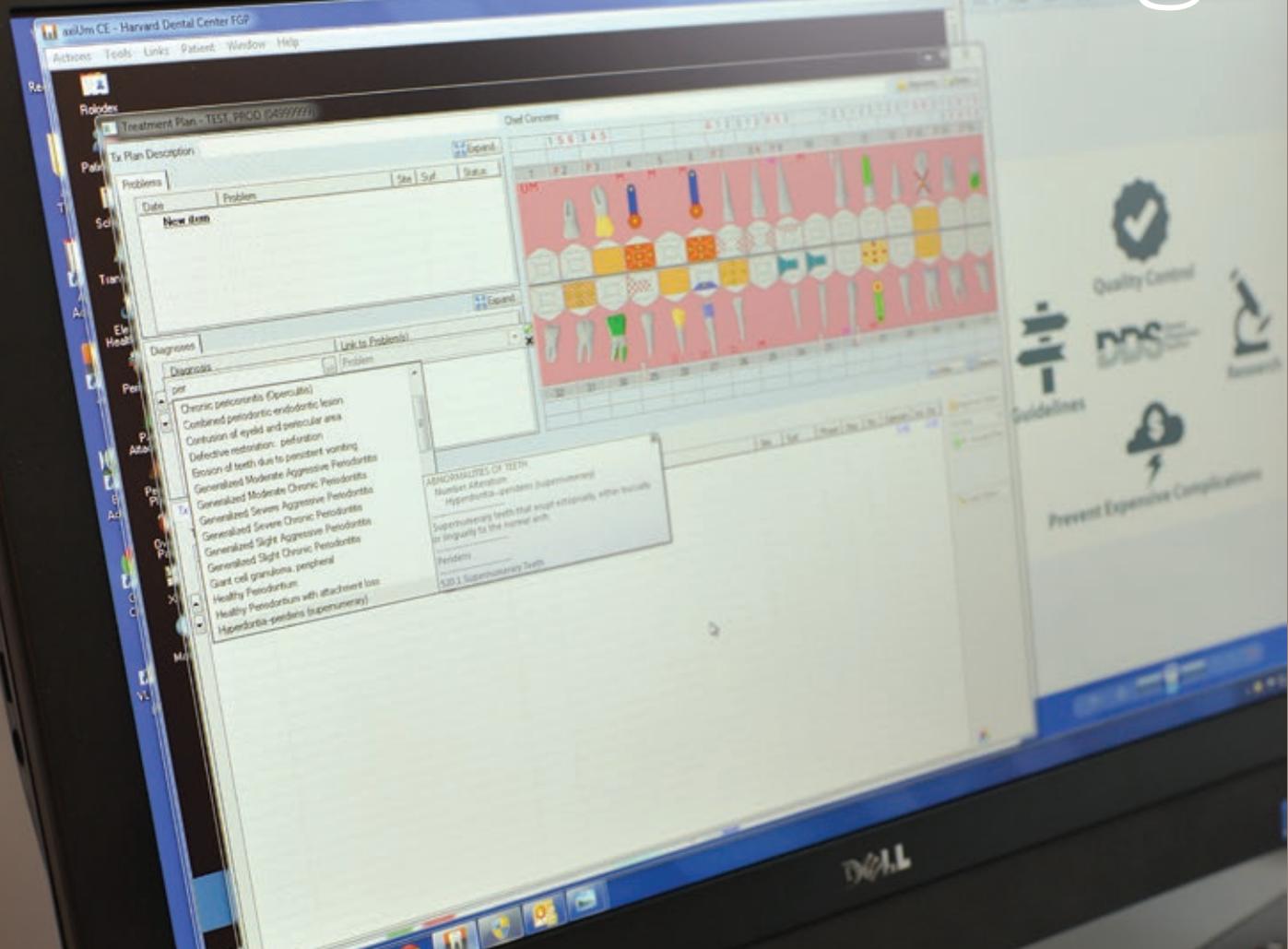
Jason Outlaw, DMSc 2015, oral biology

Shankar Rengasamy

Venugopalan, DMSc14, orthodontics

Chin-wei (Jeff) Wang, DMSc 2015, periodontology

Transforming



The electronic health record (pictured above) featuring the DDS terminology is changing the direction of dentistry.

Dental Research

ELSBETH KALENDERIAN is associate professor and chair of the Department of Oral Health Policy and Epidemiology at HSDM and Chief of Quality at Harvard Dental Center. She leads pioneering research on dental quality improvement and patient safety and is the main architect of a novel and practical dental diagnostic terminology being adopted by many dental schools in the U.S. Major goals are to map the Dental Diagnostic System (DDS) to the treatment codes (CDT) and thus be able to develop quality metrics. Additionally, mapping the DDS to the standardized medical International Classification of Diseases (ICD) as part of the billing process will improve the claim adjudication process.

On a recent trip to the Dominican Republic, Dr. Kalenderian spoke about the importance of standardizing the documentation of diagnoses as part of measuring how well evidence-based guidelines are implemented in general. The dean of the country's dental college was impressed and is working toward translating the DDS terminology into Spanish—a first step toward making DDS an international reality.

Dr. Kalenderian's research provides a solution for the dental provider because, to date, the dental profession has not yet developed a commonly accepted standardized dental diag-

“Uniform standards and documentation will change the profession. It represents a major shift in our curriculum. Our students will graduate with this training and help transform dentistry, bringing it into closer alliance with our medical counterparts.”

Elsbeth Kalenderian, DDS, MPH89, PhD

Chair and Associate Professor of Oral Health Policy and Epidemiology;
Chief of Quality, Harvard Dental Center

“HSDM research is changing the direction of dentistry—from discrete treatment of stand-alone dental needs to treatment based on structured diagnoses. In the future, oral health providers will consider treatment options based on integrated patient history and epidemiological data.”

—Dr. Elsbeth Kalenderian

nostic terminology. The DDS has many benefits, which include: allowing dentists to document the types and frequency of conditions they encounter; enhancing communication with patients and other clinicians; enabling outcomes-tracking; developing quality metrics; and, facilitating data sharing.

In recording diagnoses and treatments in a standardized way we now can ask important quality questions. For example—Why did the patient have a root canal three years ago? How many patients are treated for the same disease using the same treatment? How many adolescents have their wisdom teeth removed for a specific reason? Standardized dental diagnostic information can thus provide the epidemiological data necessary to build evidence-based dentistry. Dr. Kalenderian's pioneering work will, for the first time, make this data available.



Funded Research Projects

FISCAL YEAR 2013-14

ROLAND BARON

AP1-Dependent Regulation of Bone Mass and Energy Expenditure in the Hypothalamus | *Funder: National Institutes of Health/ National Institute of Arthritis and Musculoskeletal and Skin Diseases*

Calcitonin Regulation of Osteoclast Integrin Function | *Funder: National Institutes of Health/ National Institute of Arthritis and Musculoskeletal and Skin Diseases*

Effects of Cathepsin K Inhibition on Bone Density, Bone Quality, and Bone Formation | *Funder: Merck Sharp and Dohme Corp.*

Mechanisms and Function of the Microtubule Podosome Connection in Osteoclasts | *Funder: National Institutes of Health/ National Institute of Arthritis and Musculoskeletal and Skin Diseases*

Regulation of Osteoblast Differentiation by Delta FosB | *Funder: National Institutes of Health/ National Institute of Arthritis and Musculoskeletal and Skin Diseases*

Role of CathepsinK in Osteocytes During Lactation, Calcium Deprivation, and Skeletal Unloading | *Funder: Merck Sharp and Dohme Corp.*

Role of Zfp521 in Bone Formation and Anabolic Responses | *Funder: National Institutes of Health/ National Institute of Arthritis and Musculoskeletal and Skin Diseases*

R-Spondin3 as a Target for Anabolic Bone Therapy | *Funder: National Institutes of Health/ National Institute of Arthritis and Musculoskeletal and Skin Diseases*

EILEEN BOYE

Structural Characterization of the NFAT Activating Complex (NAC) In Hemangiomas | *Funder: The John Butler Mulliken Foundation, Inc.*

JOHN DA SILVA

Ryan White HIV/AIDS Program 2013 | *Funder: Health Resources and Services Administration*

GERMAN GALLUCCI

Clinical and Radiographic Evaluation of New Titanium-Zirconium Narrow Diameter Dental Implants: A Multicenter, Randomized, Controlled Clinical Trial | *Funder: University of Zurich*

A Comparison of Zirconia CAD/CAM and Conventionally Fabricated Single Implant Abutments and Restorations in the Esthetic Zone: A Randomized Controlled Clinical Trial | *Funder: ITI Foundation for the Promotion of Oral Implantology*

Efficiency and Accuracy of Digital vs. Conventional Impressions for Implant Rehabilitation | *Funder: ITI Foundation for the Promotion of Oral Implantology*

ARTHUR GARVEY

Duration of Behavioral Counseling Treatment Needed to Optimize Smoking Abstinence | *Funder: National Institutes of Health/ National Institute on Drug Abuse*

KEVIN GUZE

A Prospective Clinical Trial Comparing Conventional Dental Implants and Trabecula Metal Dental Implants after Staged Sinus Floor Elevation Procedures | *Funder: Zimmer Dental Inc.*

GIUSEPPE INTINI

BMP2 Regulation of the Intramembranous Bone Stem Cell Niche | *Funder: National Institutes of Health/ National Institute of Dental and Craniofacial Research*

LAURA JACOX

Role of the Bradykinin Pathway in Craniofacial Development | *Funder: National Institutes of Health/ National Institute of Dental and Craniofacial Research*

SHARON JIN

Cuspal Protection in the Age of Adhesive Dentistry | *Funder: Greater New York Academy of Prosthodontics*

ELSBETH KALENDERIAN

A Cognitive Approach to Refine and Enhance Use of a Dental Diagnostic Terminology | *Funder: National Institutes of Health/ National Institute of Dental and Craniofacial Research*

Collaborative Pilot Study of the Impact of the Use of the EZCodes Dental Diagnostic Terminology in Treatment Planning on Critical Thinking Skills of Dental Students | *Funder: Medical University of South Carolina*

Developing a Patient Safety System for Dentistry | *Funder: University of Texas Health Science Center at Houston*

A Whole Systems Approach to Implementing Standardized Dental Diagnostic Terms | *Funder: National Institutes of Health/ National Institute of Dental and Craniofacial Research*

DAVID KIM

Horizontal and Vertical Ridge Augmentations Using Recombinant Human Platelet-Derived Growth Factor-BB (rhPDGF-BB) or Recombinant Human Bone Morphogenetic Protein-2 (rhBMP-2) | *Funder: Osseointegration Foundation*

Regenerative Protocols for Re-Osseointegration in an Experiment Periimplantitis Model: A Laboratory and Canine Study | *Funder: Medical Implant System Implants Technologies, Inc.*

BEATE LANSKE

The Regulation of the Parathyroid Gland | *Funder: National Institutes of Health/National Institute of Diabetes and Digestive Kidney Diseases*

Role of Klotho in Osteoporosis and Renal Osteodystrophy | *Funder: U.S. Department of Defense*

YEFU LI

Chondro-Protective Effects of the Deletion of HtrA1 and Ddr2 in Mouse Knee Joints Against Osteoarthritis | *Funder: Servier*

Defining Common Molecular Parameters for Onset and Progression of Osteoarthritis | *Funder: Hospital for Special Surgery, New York*

Discoidin Domain Receptor 2 (DDR2) in Cartilage Biology and Osteoarthritis | *Funder: AbbVie, Inc.*

ELI MACHTEI

The Use of Extra-Short Dental Implants for Rehabilitation of Missing Teeth | *Funder: Medical Implant System Implant Technology*

SHIGEMI NAGAI

In Vivo Assessment of Optical Efficacy of Pink Colored Neck Implant and Abutment on Soft Tissue Esthetics | *Funder: Keystone Dental, Inc.*

ROMESH NALLIAH

Initiating Medically Integrated Oral Health Services at MGH Chelsea | *Funder: Massachusetts Dental Society Foundation*

Iwate Project for Curricular Changes | *Funder: Iwate Medical University*

HARIKIRAN NISTALA

Zfp521: Novel Epigenetic Regulator of MSC Differentiation | *Funder: International Bone and Mineral Society*

MARTIN NWEZIA

Using Inuit Qaujimagatuqangit Traditional Knowledge to Guide the Development of Hypotheses on Narwhal Tusk Function | *Funder: National Science Foundation*

BJORN OLSEN

Biogenesis of Extracellular Matrix | *Funder: National Institutes of Health/National Institute of Arthritis and Musculoskeletal and Skin Diseases*

Collagen Gene Structure and Expression | *Funder: National Institutes of Health/National Institute of Arthritis and Musculoskeletal and Skin Diseases*

COBRE for Skeletal Health and Repair | *Funder: Rhode Island Hospital*

Molecular and Cellular Mechanisms of Vascular Anomalies | *Funder: National Institutes of Health/National Institute of Arthritis and Musculoskeletal and Skin Diseases*

VICKI ROSEN

Adult Bone Mass Regulation by Type 2 BMP Receptors | *Funder: National Institutes of Health/National Institute of Arthritis and Musculoskeletal and Skin Diseases*

BMP-2 Regulation of Bone Homeostasis | *Funder: National Institutes of Health/National Institute of Arthritis and Musculoskeletal and Skin Diseases*

BMP-2 Signaling of the Development of Osteoarthritis | *Funder: National Institutes of Health/National Institute of Arthritis and Musculoskeletal and Skin Diseases*

Creation and Validation of a BMP/TGF-B/Activin Biosensor System | *Funder: National Institutes of Health/National Institute of Arthritis and Musculoskeletal and Skin Diseases*

Identification, Characterization, and Utilization of Adult Meniscal Progenitor Cells | *Funder: U.S. Department of Defense*

BRITTANY SEYMOUR

Human Resources for Health Program (Planning) | *Funder: Ministry of Health, Rwanda*

JEFFRY SHAEFER

Transient Receptor Potential Vanilloid-1 Sensitization in Inflammation | *Funder: Altarum Institute*

JARED SPRAGUE

Transient Receptor Potential Vanilloid-1 Sensitization in Inflammation | *Funder: National Institutes of Health/National Institute of Dental and Craniofacial Research*

BRIAN SWANN

Human Resources for Health Program (Implementation) | *Funder: Ministry of Health, Rwanda*

LISA THOMPSON

Geriatric Training Program for Physicians, Dentists, and Behavioral and Mental Health Professionals | *Funder: Beth Israel Deaconess Medical Center, Boston*

OLUWABUNMI TOKEDI

Improving the Quality of Dental Care by Implementing a Clinical Checklist | *Funder: National Institutes of Health*

MALCOLM WHITMAN

Investigating the Therapeutic Potential of the AAR Pathway | *Funder: Takeda Pharmaceutical Company Limited*

Mechanism of Action of Halofuginone as a Novel Therapeutic | *Funder: National Institutes of Health/National Institute of General Medical Sciences*

Role of a Novel Secreted Protein Tyrosine Kinase in Development | *Funder: National Institutes of Health/National Institute of Dental and Craniofacial Research*

Transforming

A woman with a white ribbed top and an orange headband is holding a baby wrapped in a white blanket. The baby is wearing a white shirt. The background is slightly blurred, showing a red bag and a chair.

HSDM's work in Haiti will help people of all ages gain access to good oral care.

Global & Community Health

HSDM IS COMMITTED to addressing the lack of access to oral health care both in the U.S. and abroad.

Jane Barrow leads the School's initiatives in this area. A main focus of HSDM's work is to assess needs and to build professional capacity through educational programming and research to address identified needs.

As Barrow notes, "Oral health problems are so inexpensive to prevent, yet may become incredibly debilitating and expensive to treat."

Working collaboratively with the Rwandan Ministry of Health and leading U.S. health institutions, HSDM is participating in the multimillion-dollar Rwanda Human Resources for Health (HRH). HRH is strengthening the health education and delivery systems in Rwanda and includes the establishment of the first-ever School of Dentistry, which is located within the College of Medicine and Health Sciences at the University of Rwanda in Kigali.

Along with other leading U.S. academic institutions, HSDM sends faculty and students to bolster this ambitious initiative.

"There is a preponderance of evidence that a healthy mouth is necessary for a healthy body. We are striving for an interdisciplinary approach that integrates oral and general health. We are working with colleagues from other health professions to provide interprofessional learning opportunities for our students. Our goal is to create groundbreaking models of collaboration and partnership to improve health care education and delivery systems."

"An important part of our mission is to expand access to oral health care to underserved populations, whether in remote areas of the world or here in the United States. To that end, we are building a community of global health leaders."

—Assistant Dean Jane Barrow

The HRH oral health team, which includes HSDM, the University of Maryland and the University of Rwanda faculty, has developed curriculum for a bachelor of dental surgery degree. According to Dean Barrow, "We have been able to leverage the existing dental therapy program and add the new dental surgery program. This extends the scope of practice to a new level and enables the therapists and surgeons to work together collaboratively to provide more comprehensive oral care to the Rwandan population.

This team-based approach of therapists and surgeons working together with doctors and nurses may be a model we emulate some day in the U.S. Barrow notes that here in the U.S., only Alaska and Minnesota license

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Jane Barrow, AB84, MS87

Assistant Dean of Global and Community Health



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HSDM faculty member Dr. Donna Hackley, an instructor in oral health policy and epidemiology, teaches students training to become dental therapists at the University of Rwanda School of Dentistry in Kigali.

dental therapists. As with Rwanda, those states have very few dentists to cover vast, hard-to-reach areas, and dental therapists can provide much-needed preventive care.

When the program ends in 2019, the goal is to leave an empowered, self-sustaining Rwandan health care workforce to continue the mission of providing quality and affordable care.

HSDM is also engaging in potentially transformative initiatives in Japan, Haiti, Bolivia, Vietnam, and India, among other locations. In Japan, faculty are working to transform the curriculum at Iwate University in Morioka.

In Haiti, working in collaboration with the Haiti Dental School (HDS), HSDM is collaborating on new curriculum to teach primary care providers about basic dental care. HSDM is establishing task forces

with the HDS to better prepare for emergencies and disaster relief; to collect data on disease burden; and, to build faculty capacity. HSDM also has consulted with Partners in Health on planning and implementing a dental clinic in Mirebalais.

Here in the U.S., initiatives include working with the Wampanoag tribe and other year-round residents on Martha's Vineyard. This community faces significant challenges accessing oral health services. Almost all of the island's dental practices accept only cash and decline both private and public insurance. The Martha's Vineyard Hospital Dental Clinic is the only clinic that will accept health insurance. The wait for an appointment at the hospital clinic can last months. This means that tribal members and other residents may have to travel off the island for treatment which can take an entire day and cause delays in accessing needed treatment.

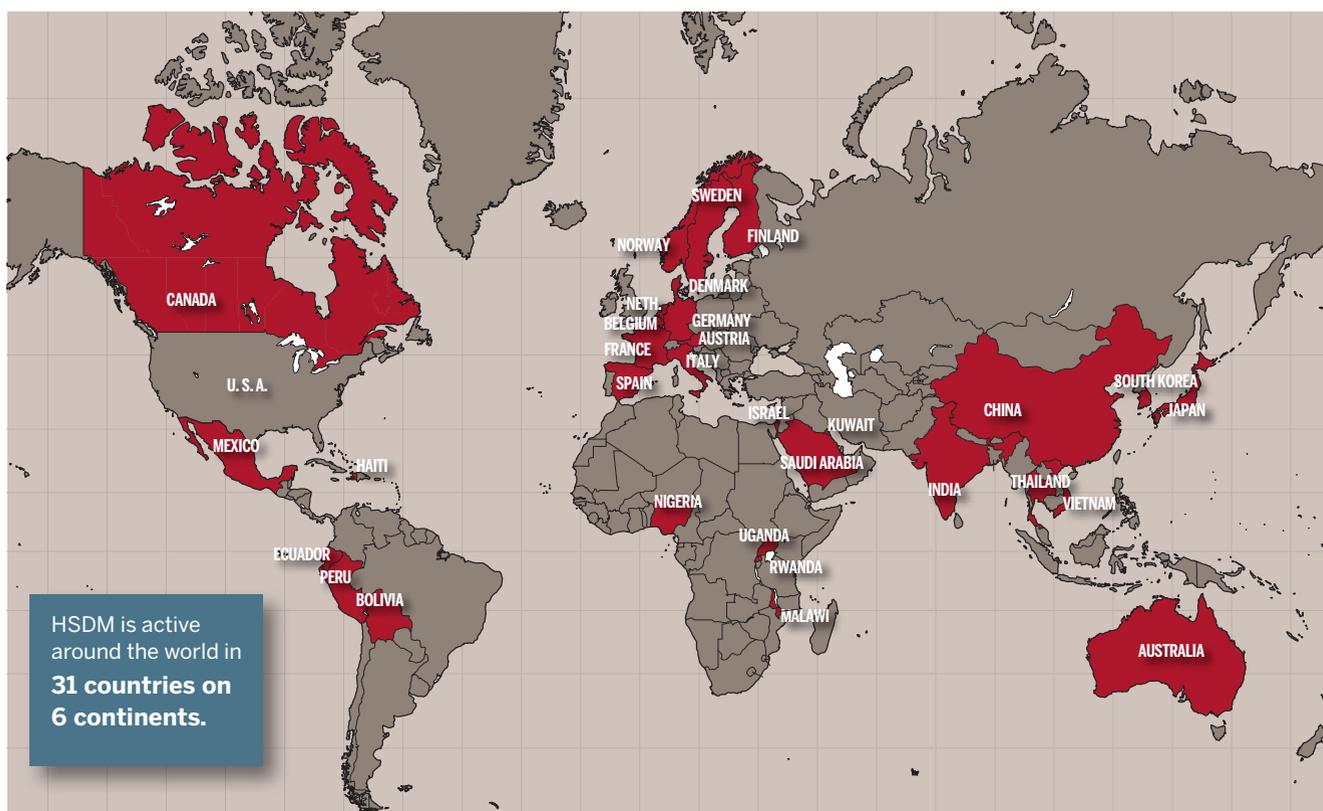
In our locally and globally based programs, HSDM's Office of Global and Community Health takes a comprehen-

sive view of oral and general health, and accounts for social determinants which may affect health such as consumption of sugary drinks, smoking, diabetes, improper nutrition, and lack of health insurance. Through research, education, and capacity building activities, HSDM is making significant headway in addressing these obstacles to good oral health.

The largest of the current programs is a ground-breaking project in Rwanda, where there are only about two dozen dentists and just over 200 dental therapists serving a population of more than 11 million—most of whom live in areas with little or no access to these few health professionals.



Led by HSDM faculty member Dr. Brian Swann, an instructor in oral health policy and epidemiology, HSDM and the Wampanoag Tribe of Gay Head (Aquinnah) signed a memorandum of understanding to create better access to oral and systemic health care for the tribe and other underserved community members on the Massachusetts island of Martha's Vineyard.



Transforming

Patient care at the Harvard Dental Center is served in two state-of-the-art practices—the Faculty Group Practice and the Teaching Practices.



Clinical Practice

THE HARVARD DENTAL CENTER (HDC) is where academics and skills training meet in two real-world treatment settings. HDC provides HSDM students with opportunities to practice what they've learned and deliver much-needed patient care. Patient care is delivered through two state-of-the-art clinical practices: the Faculty Group Practice, which enables internationally known HSDM faculty to apply current research and specialty care to patient needs; and, the Teaching Practices, which enable dental students to deliver top-notch oral health care at the School. Most neighborhood health clinics offer minimal dental services, whereas the Teaching Practices at HDC offers both general dentistry and specialty care such as root canals, orthodontics, periodontics, and extractions.

Catherine Lane, recently promoted to assistant dean of clinical affairs and business development, highlighted some of the operational efficiencies that improve patient care delivery over the past year. They include a remodeled central sterilization department, featuring new "green" instrument washing and sterilization equipment that reduces time, water, and power consumption.

HDC has contracted with vendors to provide digital capabilities for recording real-time dental impressions, facial scans, and other dental digital technology. HDC also introduced an Electronic Prescribing of Controlled Substances (EPCS) system that will allow HSDM

Give more kids a smile—and that goes for adults, too! It's a mantra of sorts for Harvard Dental Center.

providers to send prescriptions to retail pharmacies, with the added benefit of a direct interface with HDC's electronic health record. Another innovation, Easy-Markit, enables HDC patients to confirm appointments through email, text, and voice messaging.

These operational initiatives have a larger goal—reaching more patients who need dental services. The Teaching Practices has contracted with Commonwealth Care Alliance, an insurance plan that provides oral health care benefits for the elderly, medically compromised patients, and individuals who do not have the financial means to otherwise seek oral health care. This partnership will greatly enhance access to oral hygiene practices and aid in the prevention and care of dental disease.

To further ensure superior clinic services, Myra Garza was promoted to associate director of clinical operations and Andreas Radics was hired as clinical operations and materials manager.

HARVARD SCHOOL OF
DENTAL MEDICINE
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"Harvard Dental Center makes a huge difference in an adult or child's life.

Imagine a child in need of braces who

can get them through Harvard Dental Center—complete with the multi-colored rubber bands that their classmates are sporting!

These kids no longer feel ostracized but rather accepted by their peers! They will become much healthier as a result."

Catherine Lane, BS

Assistant Dean of Clinical Affairs and Business Development

Transforming HSDM through

Harvard School of Dental Medicine is deeply grateful to the following individuals and organizations for gifts received during fiscal year 2013–2014, from July 1, 2013, through June 30, 2014.

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Henry Warren made the first planned gift to HSDM in 1899 in the form of a bequest for \$10,000. The School is exceedingly grateful to those who have expressed their intention to provide for HSDM in their financial planning. To recognize this thoughtfulness, the School established the Henry C. Warren Society.

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Paul Schnitman, PD74
Edward Bert Seldin, DMD68, MD68, and
Lisa Witham
Anne C. Tanner
Richard W. Valachovic, MPH81, SM82,
PD82, and Mary Kay Leonard

Organizations

Dickerman Dental Prosthetics
Eastern Dentists Insurance Company
G. Gorham Peters Trust
LEXI-COMP, Inc.
Straumann USA, LLC

IN HONOR OF

A gift in honor of a friend or loved one acknowledges the esteem in which an individual is held. During 2014, HSDM received donations in honor of the following individuals:

R. Bruce Donoff, DMD67, MD73
Chester W. Douglass, AM89
Joel L. Dunsky
Aram E. Elovic, DMD89, DMSc92, PD89
Antonia Fernandez
Bernard Friedland
Walter C. Guralnick, DMD41
T. Howard Howell Jr., AM98, PD76
MaryAnne Irwin
Paul J. Kalis
Alvin A. Krakow
Wanda Mock
Diana Lynn Montagu, DMD13
Edward R. Mopsik, DMD67
Martha Epstein Pierce, EDM77
Edward Bert Seldin, DMD68, MD68
Ray C. Williams, PD73

IN MEMORY OF

A memorial gift in the name of a friend or loved one provides a tribute that lives on in service to others. During 2014, HSDM received donations in memory of the following individuals:

Benjamin K. Ammenwerth, DMD49 *
David J. Baraban, DMD43 *
Henry D. Epstein, DMD40 *
David J. Farrell, DMD51, COL45 *
Wallace J. Gardner, DMD39 *
Bernard D. Gold, DMD58 *
Paul Goldhaber, AM62 *
Elizabeth Marson Guralnick, AB41 *
William M. Hoffman, AB37, DMD41 *
Richard A. Lehman*
Paul K. Losch, AM50 *
Richard Oringer, DMSc96, PD96 *
Masako Sakamoto *
William B. Weston, DMD44 *

VOLUNTEERS

Many individuals contribute to the success of HSDM. Below we recognize individuals for their selfless energy and voluntary support to further the mission of the School.

Thomas Albert, DMD71, MD77, PD75
Ladan Basiri, DMD93
Wayne Bebeau
Alan Carlotto, DMD14
Dawn DeCosta
Amy Fenton
German O. Gallucci
Donald Giddon, DMD59, PD62, and
Phoebe Giddon
Colleen Greene, DMD13, MPH13
Rita K. Han, MMSc11, PD11, PD13
T. Howard Howell Jr., PD76
Giuseppe Intini
Megan Jennings
Samantha Jordon, MPH13, PD14
Deb Milstein
Benjamin Mojica
Allen Ali Nasseh, MMSc97, PD97
Jason Outlaw, (DMSc15)
Fatima Pecanha
Michael E. Rowan, DMD67
Paul Schnitman, PD74
Patricia Sliinin, DMD96, PD96
Jennifer Vasquez
Helen Youm, DMD06, PD09, MMSc09

COMPARATIVE FINANCIAL STATEMENT

Year ended June 30th 2013 2014

Income Summary

Tuition and fees	\$11,245,100	\$11,989,400
Endowment	7,832,000	8,302,500
Dean's endowment	820,200	839,400
Gifts for current use	270,500	316,700
Faculty Group Practice indirect	700,000	700,000
Other income	56,200	128,900

Government

Direct	4,909,800	6,663,300
Indirect	2,690,800	2,746,100

Nongovernment

Direct	1,530,400	1,123,100
Indirect	623,200	420,100

TOTAL INCOME

\$30,678,200 **\$33,229,500**

Expenses Summary

Academic departments	\$3,706,800	\$3,853,300
Harvard Dental Center net clinical operations	198,100	228,200
Educational services	6,087,400	6,450,400
Administration*	5,557,600	5,918,800
University assessments	1,633,400	1,609,100
Operations and debt service	6,579,900	6,899,300
Research and training	6,664,100	8,059,700

TOTAL EXPENSES

\$30,427,300 **\$33,018,800**

*Includes Offices of the Dean, Administration and Finance, Development and Alumni Relations, and Research.

Epilogue

Transforming is an adjective from the Latin *trānsfōrmāre*, meaning to change in shape. For almost 150 years, Harvard School of Dental Medicine has been transforming the profession.

We look forward to a future where oral health will serve an even more prominent role in preventive care, education, research, and clinical practice around the globe.

Leadership

Dean

R. Bruce Donoff, DMD67, MD73
*Walter C. Guralnick Distinguished Professor of Oral
and Maxillofacial Surgery*

HSDM Departments

Developmental Biology

Vicki Rosen, PhD, *Chair and Professor of
Developmental Biology*

Oral Health Policy and Epidemiology

Elsbeth Kalenderian, DDS, MPH89, PhD, *Chair
and Associate Professor of Oral Health Policy and
Epidemiology; Chief of Quality, Harvard Dental Center*

Oral and Maxillofacial Surgery

Leonard B. Kaban, DMD69, MD69, *Chair and Walter C.
Guralnick Professor of Oral and Maxillofacial Surgery*

Oral Medicine, Infection and Immunity

Roland Baron, DDS, PhD, *Chair and Professor of
Oral Medicine, Infection and Immunity; Professor of
Medicine, Massachusetts General Hospital*

Restorative Dentistry and Biomaterials Sciences

German Gallucci, DMD, PhD, *Interim Chair and
Associate Professor of Restorative Dentistry and
Biomaterials Sciences*

Vice Dean

John D. DaSilva, DMD87, MPH87, PD89, PD91

Dean for Administration and Finance

Charles Frizzell, BS

Dean for Research

Bjorn R. Olsen, MD, PhD
*Professor of Developmental Biology, Hersey Professor
of Cell Biology, Harvard Medical School*

Associate Dean of Development and Alumni Relations

Nancy L. Jones, MA, MDiv

Assistant Deans

Catherine R. Lane, BS, *Clinical Affairs and Business
Operations*

Sang Park, DDS, MMSc01, PD01 (prosthodontics),
Dental Education

Wanda Mock, MA, *Development and Alumni Relations*
Jane Barrow, AB84, MS87 *Global and Community
Health*

Dean's Advisory Board (2014)

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Gillian Barclay, DPH99

Ladan Basiripour, DMD93

James P. Breslawski

Julie B. Charlestein

C. Leon Chen, DMD93

Bart Doedens

Chester W. Douglass, AM89

Albert Erani

Patrik Eriksson

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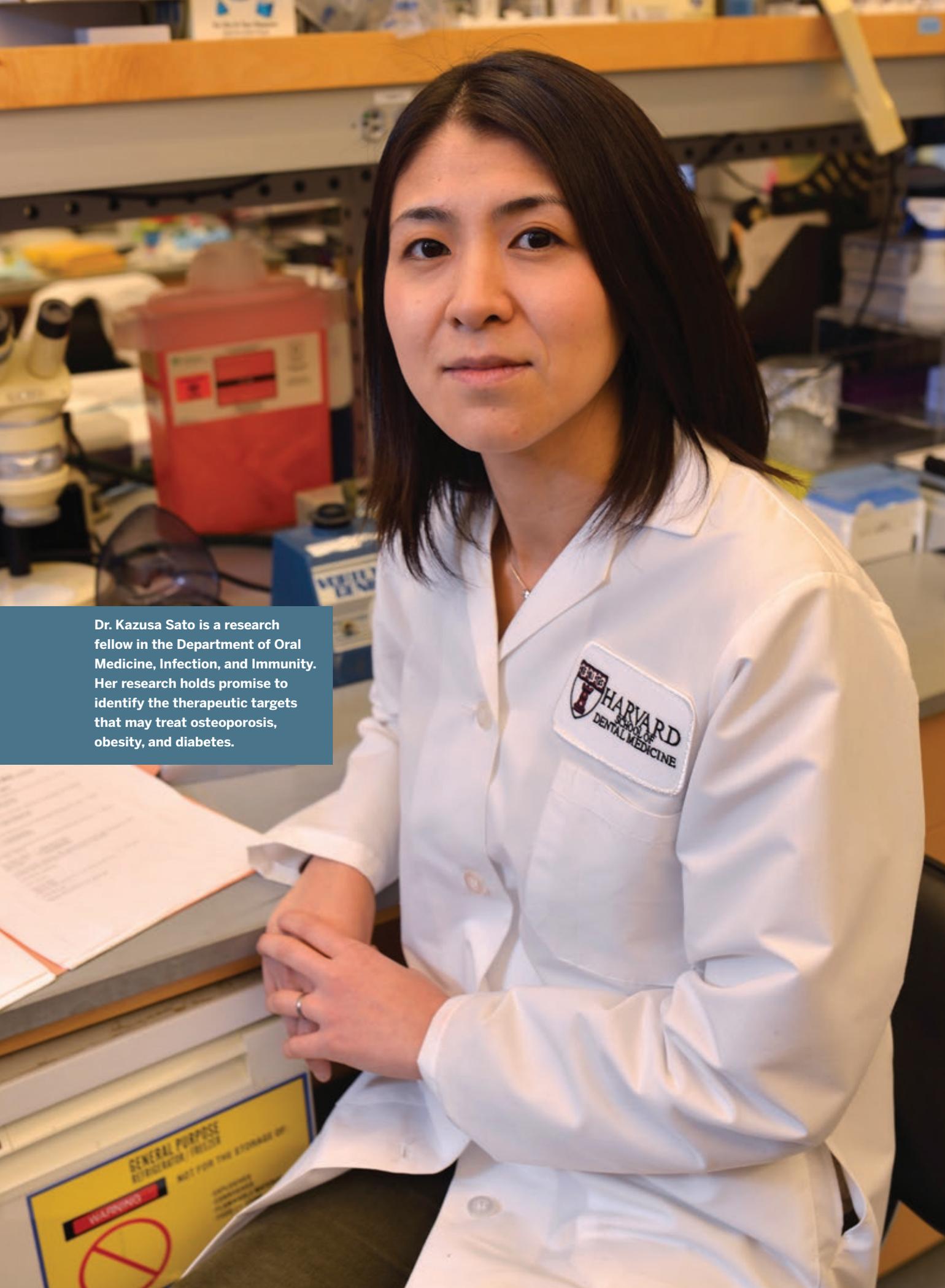
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Dr. Kazusa Sato is a research fellow in the Department of Oral Medicine, Infection, and Immunity. Her research holds promise to identify the therapeutic targets that may treat osteoporosis, obesity, and diabetes.

GENERAL PURPOSE
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With my compliments.

Bruce Donoff
Dean