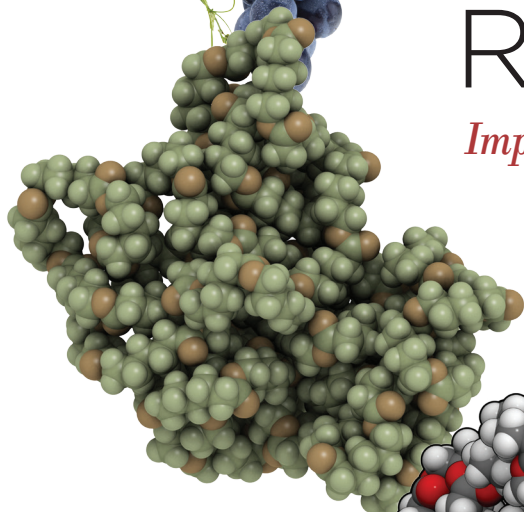


NEW YORK UNIVERSITY COLLEGE OF DENTISTRY

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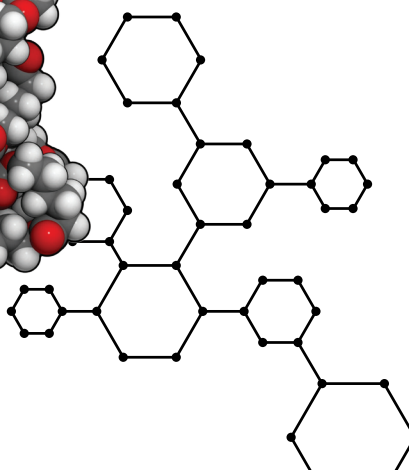
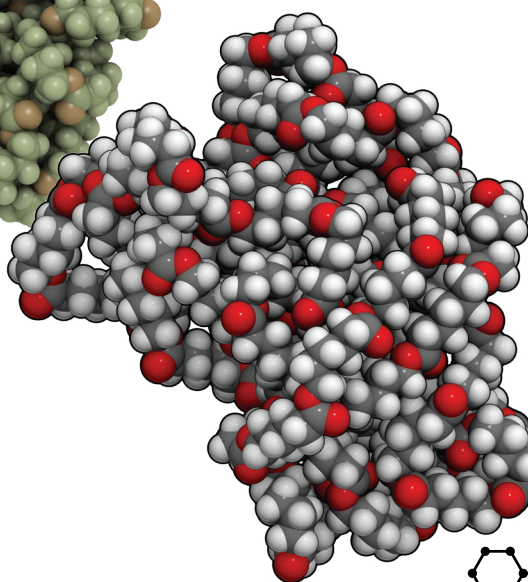
NEXUS

WINTER 2019 VOL. 20 NO. 1



THE BIOMATERIALS REVOLUTION

Impact on Clinical Practice and Patient Care





Connections.

We know the oral health/systemic health connection.

We value the faculty/student success connection.

We progress with the research innovation/public health connection.

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Thank you for your support.



This issue of *Global Health Nexus* focuses on the advances in both clinical dentistry and medicine that are being made possible as a result of the meteoric scientific and technological revolution in biomaterials that is underway; hence, the title, “The Biomaterials Revolution: Impact on Clinical Practice and Patient Care.” To discuss this very timely topic, we have invited distinguished investigators and clinicians in the field to share their perspectives.

We lead off with Eduardo D. Rodriguez, MD, DDS, a 1992 graduate of NYU College of Dentistry, who serves as Helen L. Kimmel Professor of Reconstructive Plastic Surgery and Chair, Hansjörg Wyss Department of Plastic Surgery at the NYU School of Medicine. Dr. Rodriguez takes us through a brief history of the use of biomaterials in healthcare and discusses the importance of collaboration among scientists from different disciplines in disseminating the findings of biomaterials research and fostering the development of new dental and medical therapies.

Paulo G. Coelho, DDS, PhD, Leonard I. Linkow Professor of Biomaterials at

NYU Dentistry, professor of plastic surgery at the NYU School of Medicine, and professor of mechanical and aerospace engineering at the NYU Tandon School of Engineering, discusses the major therapeutic advances that are taking place in biomaterials research as a result of collaborations among researchers at NYU’s College of Dentistry, School of Medicine, and the Tandon School.

The discussion continues with an article by John T. McDevitt, PhD, professor and chair of the Department of Biomaterials, on the specific areas of research being pursued by members of his department, including his own work on sensors that learn. Other members of his department, Drs. John Ricci, Yu Zhang, and Timothy Bromage, share the advances they are making using biomaterials, and in Dr. Bromage’s case, studying the elemental composition of water, to improve the clinical practice of dentistry and overall human health.

Other stories highlight major innovations in progress at the College, including the construction of a \$12 million, 8,000 square foot, NYU Dentistry Oral Health Center for People with Disabilities,

which is scheduled to open in early 2019. Receiving dental care is inordinately difficult for people with either physical or cognitive impairment, as there is no place in the Greater New York area that currently provides adequate accommodations for them. The new Center is designed to meet this need. It is an extremely exciting project which will improve the lives and well-being of this highly vulnerable population, as well as educate a new generation of practitioners who will have the skills and confidence to treat these patients on an ongoing basis.

We also bring you news of discoveries from our laboratories that have the potential to improve the lives of oral cancer patients, make implants more bone friendly, prevent bone loss, and use saliva to identify diagnostic markers of the Zika virus, among others. And we highlight the robust grants and philanthropy that are supporting both our patient care and research initiatives.

These are just a few examples of what our dedicated faculty, students, and staff are doing to create a healthier world.

Enjoy the issue.

Charles N. Bertolami

Charles N. Bertolami, DDS, DMedSc
Herman Robert Fox Dean

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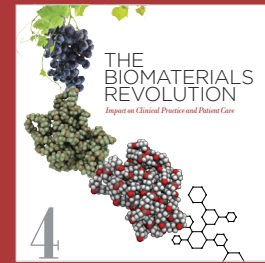
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“We become what we behold.
We shape our tools and then
our tools shape us.”

— Marshall McLuhan



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A portrait of Dr. Eduardo D. Rodriguez, a man with dark hair and a slight smile, wearing a white lab coat over a grey vest and a patterned tie. He is standing in a surgical suite, with a large, circular surgical light visible in the background. The lab coat has a name tag that reads "Dr. Eduardo D. Rodriguez, Chairman, NYU Plastic Surgery".

*Dr. Eduardo D. Rodriguez
Chairman
NYU Plastic Surgery*

The Role of Modern Biomaterials in Advancing Medical and Dental Care

by

Eduardo D. Rodriguez, MD, DDS

Helen L. Kimmel Professor of Reconstructive Plastic Surgery
and Chair, Hansjörg Wyss Department of Plastic Surgery,
NYU School of Medicine

"We become what we behold.

We shape our tools

and then

our tools shape us."

— Marshall McLuhan

This visionary observation from Marshall McLuhan is especially pertinent to the interplay among clinicians, innovations, and their impact on clinical practice. As we invent tools and technologies that reshape our ability to improve patients' health and well-being, our behaviors and attitudes are unconsciously shaped by these same tools and technologies. As a result, therapies that were unimaginable yesterday are entering mainstream practice with lightning speed.

The fields of dentistry and surgery arose from the need to visualize treatment of disease, with the maintenance of dexterity and technical abilities as major challenges. Today's clinicians face the biggest challenge yet as defined by an explosion of medical knowledge and breakthroughs. Cultivating one's manual dexterities is simply not enough anymore, and a strong knowledge of the materials available within the clinician's armamentarium is essential for sound practice, surgical judgment, and optimal patient care. It is therefore not surprising that the last 50 years have witnessed an explosion of growth in the study of the properties of these materials, their interactions with biological systems, as well as their contribution to patient diagnostic and therapeutic strategies. The combination of these efforts and the accelerated pace of bench-to-bedside translational initiatives have resulted in the establishment of the field of biomaterials and the reinforcement of its role in biomedical innovation.

From linen sutures used by the Egyptians in the Neolithic era, to nacre teeth fashioned from sea shells by the Mayan civilization around 600 AD, the introduction of biomaterials into the human

body with successful integration has been reported since early history. While the exact historical date of the first use of a biomaterial remains unclear, what is certain is that contemporary biomaterials are ubiquitous in all medical and surgical specialties; they are becoming more complex, and hold the potential to dramatically alter clinical practice and patient care.

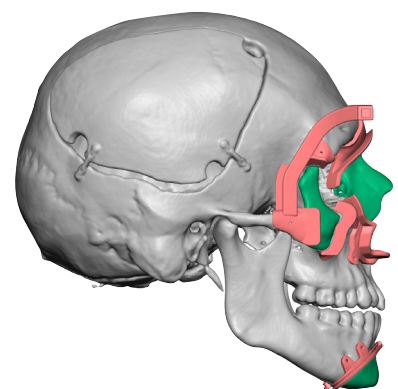
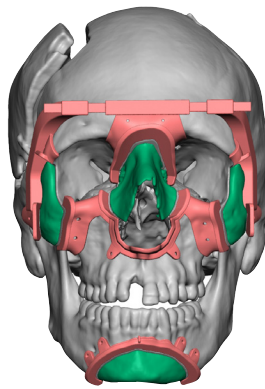
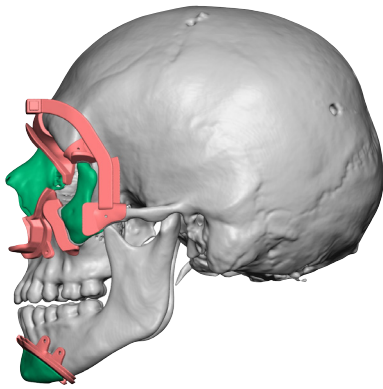
My career as a dentist, physician, oral surgeon, and plastic surgeon has provided me with the opportunity to witness the multifaceted and evolving role of biomaterials in craniofacial reconstruction and rehabilitation of patients first hand. The evolution of biomaterials used in the treatment of facial fractures is perhaps the most straightforward demonstration of this principle. Initially described in 1886 by Carl Hansmann, early nickel-based osteosynthesis plating systems have made way for modern alternatives based on highly biocompatible and corrosion-resistant biomaterials such as titanium, as well as completely bioabsorbable materials. Similarly, an extensive gamut of modern biomaterials, including metals, alloys, ceramics, and polymers, have replaced corrosive substances used in the early days of dental implantology. The evolution of these materials and their signature biomechanical properties have resulted in a dramatic improvement in patient biocompatibility and provided clinicians the opportunity to develop tailored patient-specific therapeutic approaches for optimal function.

In 2015, our team performed the most extensive face transplant to date. The recipient was a 41-year-old male firefighter who sustained a full facial and total scalp burn in 2001 while in the line of duty. The transplanted facial

allograft included the entire face, eyelids, ears, scalp, as well as critically important skeletal subunits. The incorporation of the skeletal subunits in the facial allograft despite a normal recipient craniofacial skeleton constituted a novel approach to facial transplantation. This approach allowed us to preserve facial ligaments and muscular insertions, as well as to avoid potential laxity and ptosis of the allograft soft tissue. Two years after transplantation, the patient reports a dramatic improvement in his quality of life and satisfaction with the face transplant. Facial mimetic function, sensation, speech, and facial expressions such as smiling and lip puckering have demonstrated progressive improvement, and have played a key role in the patient's successful reintegration into society.

Meticulous team preparations, multidisciplinary patient care, biomedical innovations, and the use of contemporary biomaterials were key elements in the successful performance of our face transplant. Stable fixation of the described skeletal subunits contributed to the novelty of the procedure and resulted in an optimal functional and aesthetic outcome. This was possible because of the wide-ranging inventory of titanium-based fixation systems available today. More importantly, the use of computerized surgical planning and custom patient-specific 3D-printed bone-cutting guides allowed us to perform the required osteotomies on both the donor and recipient with a high level of fidelity and accuracy.

The collaboration between the Hansjörg Wyss Department of Plastic Surgery and the NYU College of Dentistry Department of Biomaterials has resulted in various applications of 3D-printing



in preclinical models with immense translational clinical potential. Pioneering research spearheaded by Paulo Coelho, DDS, PhD, from the Craniofacial Orthopedic Biomaterials Regenerative Applications Laboratory has shown that 3D-printed scaffolds impregnated with osteogenic biomaterials can significantly improve bone regeneration in critically sized skeletal defects. This interest in improved skeletal healing and regeneration has also resulted in the characterization

of the biocompatibility and osteogenesis-promoting capabilities of several alloys which hold clinical promise in the treatment of facial injury. Similarly, innovative research efforts led by John L. Ricci, PhD, FBSE, and Yu Zhang, PhD, in the Department of Biomaterials are providing the dental and medical community insight into the unique biomechanical properties of materials and their interactions with the surrounding tissues and biological systems.

The exceptional collaboration and unique environment among the NYU Dentistry's Department of Biomaterials, the Hansjörg Wyss Department of Plastic Surgery, and the various research groups on campus provide us with unparalleled innovative potential. The unique combination of patient-centric and clinically driven methodical research endeavors is providing the impetus to shape tools and biomaterials that optimize patient care in this millennial biomaterials revolution. ■

COVER STORY

JADA Features Collaborative Work of NYU Dental and Medical Faculty in Facial Transplantation



The February 2018 issue of the *Journal of the American Dental Association* (JADA) featured a collaborative paper by Natalie M. Plana, BA, a predoctoral research fellow, Rodrigo Diaz Siso, MD, a postdoctoral research fellow, Lawrence E. Brecht, DDS, assistant professor, Eduardo D. Rodriguez, MD, DDS, professor and chair, all of the Hansjörg Wyss Department of Plastic Surgery at NYU Langone Health, and Joao Malta Barbosa, DDS, MSc, a postdoctoral student in the Jonathan and Maxine Ferencz Advanced Education Program in Prosthodontics at NYU Dentistry.

The paper, "Dental Considerations and the Role of Prosthodontics and Maxillofacial Prosthetics in Facial Transplantation," considers the contributions of prosthodontists throughout the facial transplantation (FT) process, from patient selection and dental evaluation to long-term dental rehabilitation of the transplant patient postoperatively. The authors conclude that the maxillofacial prosthodontist's contribution is crucial to the long-term dental restoration of the edentulous facial transplant candidate, in addition to the fabrication of a donor mask that offers a humanistic component to the donor's remains, thereby fulfilling the team's ethical responsibilities to maintain the donor's dignity. ■

A professional portrait of Paulo G. Coelho, DDS, PhD, a man with a shaved head and light brown eyes, wearing a dark navy blue suit, a light blue dress shirt, and a blue patterned tie. He is standing with his hands clasped in front of him against a solid grey background.

Three NYU Schools Pioneer Innovations To Address a Wide Variety of Unmet Needs in Clinical Dentistry and Medicine

by

Paulo G. Coelho, DDS, PhD

Leonard I. Linkow Professor of Biomaterials
NYU College of Dentistry

Professor, Hansjörg Wyss Department of Plastic Surgery
NYU School of Medicine

Professor, Mechanical and Aerospace Engineering
NYU Tandon School of Engineering

“An interdisciplinary approach to tissue regeneration and healing that encompasses bioengineers, plastic surgeons, oral and maxillofacial surgeons, dentists, and basic and translational scientists [enables us to think] critically about challenges from the patient’s bedside, bringing these problems to the research bench, and innovating to bring solutions back to the bedside.”

— Dr. Paulo Coelho

The aim of healing patients with extensive bony defects and trauma by providing the most innovative and effective options possible has resulted in an extraordinary collaboration among the Department of Biomaterials at NYU College of Dentistry, the Hansjörg Wyss Department of Plastic Surgery, Division of Translational Medicine, at NYU School of Medicine, and the Department of Mechanical and Aerospace Engineering at NYU Tandon School of Engineering. An interdisciplinary approach to tissue regeneration and healing that encompasses bioengineers, plastic surgeons, oral and maxillofacial surgeons, dentists, and basic and translational scientists has resulted, and their approach is simple: think critically about challenges from the patient’s bedside, bring these problems to the research bench, and innovate to bring solutions back to the bedside. This has given rise to a new culture of scientific collaboration among people with a wide range of expertise, all of whom are passionate about delivering optimal patient care. This collaborative effort has also been the impetus for investigating healing and regeneration in many other ways, including regeneration of the extremities, spinal bones, the growing craniofacial skeleton, novel technical approaches to facial reconstructive surgery, and the development of novel alloys for rigid fixation of bone, as well as the regeneration of other types of tissue, such as cartilage and peripheral nerves. Despite the considerable academic and professional achievements of the collaborators, there exists deep humility and the shared aim to improve the lives of patients without ego, and without regard for accolades or acclaim.

Thanks to the interaction made possible by my appointments at NYU Dentistry, Medicine, and Engineering, a unique team of engineers, scientists, clinicians, and clinician-scientists with complementary backgrounds has come into being. This research team’s robust understanding of patient needs, cutting-edge cell biology, and engineering, along with clinical expertise and skills needed to rapidly deploy innovative surgical treatments, has been recognized by several institutes within the National Institutes of Health and the Department of Defense, leading to over \$6.5M in extramural funding in a period of less than two years.

The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) currently supports research efforts which I co-lead with Bruce Cronstein, MD, the Paul R. Esserman Professor of Medicine at NYU Langone Health. Together, we are investigating the bone regenerative potential of drugs that activate adenosine receptors and their delivery to defects at various anatomic sites. The most promising of these compounds is Dipyridamole, an anti-platelet medication that has been used for decades in patients for indications such as cardiac stress testing and anti-thrombotic prophylaxis. More recently, our work has demonstrated that Dipyridamole indirectly activates the adenosine A2A receptor to augment bone healing, and it does so to a degree that is equivalent to recombinant human bone morphogenetic protein 2 (rhBMP-2). This remarkable and novel property of Dipyridamole has continued to show osteogenic promise when delivered locally via 3D-printed bioactive ceramic scaffolds when studied in translational preclinical models.

These regenerative principles have also led to a collaboration with Eduardo D. Rodriguez, MD, DDS, the Helen L. Kimmel Professor of Reconstructive Plastic Surgery and Chair of the Hansjörg Wyss Department of Plastic Surgery. Dr. Rodriguez’s impact on reconstructive surgery derives from his efforts to restore normalcy to patients with significant facial defects by going beyond conventional surgical approaches. Injuries that cannot be addressed with conventional surgery are usually the result of high-energy trauma often seen in battlefield settings. Dr. Rodriguez and I are currently funded by the Department of Defense to address such injuries by investigating the efficacy of localized adenosine receptor signaling via 3D-printed scaffolds on large bony defects of the extremities.

Since investigations thus far utilizing Dipyridamole have demonstrated safe use and a lack of undesired side effects, another investigation I am pursuing, in collaboration with Roberto L. Flores, MD, the Joseph G. McCarthy Associate Professor of Reconstructive Plastic Surgery and Director of Craniofacial Surgery Fellowship at NYU Langone Health, is Dipyridamole’s potential in pediatric translational models. Our research, which is being funded by the National Institute of Child Health and Human Development (NICHD), aims to investigate 3D-printed scaffold delivery of Dipyridamole in the growing skull, with the ultimate goal of developing novel treatments in pediatric patients suffering from various congenital craniofacial anomalies, such as alveolar clefts, which affect three out of four cleft lip and palate patients, and craniosynostosis, a condition in which one or more of the fibrous sutures in an infant skull prematurely fuses by turning



From left, standing: Roberto L. Flores, MD; Jacques H. Hacquebord, MD; Paulo G. Coelho, DDS, PhD; Bruce Cronstein, MD; Christopher D. Lopez; Andrea Torroni, MD, PhD; and Nick Tovar, PhD. Seated: Eduardo D. Rodriguez, MD, DDS; and Lukasz Witek, MSci, PhD.

into bone. Our early work has shown extreme promise, as Dipyridamole, when delivered via 3D-printed bio-ceramic scaffolds, continues to demonstrate a positive safety profile and regenerative capacity in skeletally immature models of the cranio-maxillofacial skeleton.

Given the large-scale efforts underway, I meet regularly with all collaborators to discuss how to constantly improve and ensure that we do not lose our momentum. An important benefit of our close collaboration is that diverse ideas and areas of expertise continually give rise to new ideas and new initiatives. One such example is the early success of extremity regeneration in preclinical models, which has prompted additional ambitious investigations into other bone surgery applications, such as spine surgery, an area led by Andrea Torroni, MD, PhD (Plastic/Oral and Maxillofacial Surgery) and Jacques Hacquebord, MD (Orthopedic/Plastic Surgery).

Another example of collaborative innovation among NYU Dentistry, Medicine, and Engineering focuses on designing the next generation of metallic implants for bone fixation. While titanium has been the implant material of choice in surgical fixation for decades, limitations persist because titanium alloys have high density, limited degradation capacity and complications such as hardware infection, interference with skeletal development in growing patients, and interference with imaging modalities can occur. In order to address these limitations, Nikhil Gupta, PhD (Mechanical and Aerospace Engineering at NYU Tandon School of Engineering), Dr. Torroni, and I are investigating the use of magnesium alloys as an alternative to titanium alloys for bone surgical fixation. When implanted in the past, magnesium alloys degradation kinetics have been shown to be inadequate for clinical application due to an uncontrolled degradation rate and poor biomechanical competence. Such a drawback, however, may no longer prevail since the magnesium-based alloys under investigation by the team have pre-

sented encouraging outcomes. This multidisciplinary work has recently resulted in two scientific publications led by Dr. Torroni which appeared in *The Journal of Cranio-Maxillo-Facial Surgery*.

As all of the innovations resulting from collaborative efforts gain momentum, the multidisciplinary team has also focused on the next generation of innovators through mentorship, teaching, and opportunity. Lukasz Witek, MSci, PhD, a graduate of the NYU Department of Biomaterials graduate program (Class of 2010), returned to the Department of Biomaterials to complete his postdoctoral training and simultaneously lead my research laboratory. Dr. Witek, a chemical engineer highly versed in additive manufacturing (3D-printing) and materials science, brought to the team a unique set of skills, creative ingenuity, and commitment to innovation that, along with Dr. Flores' craniofacial surgery expertise, has translated into newer projects such as the addition of 3D-printed models for facial plastic surgery, work recently published in the plastic and craniofacial surgery literature. Another prime example of talent developed by the team is Nick Tovar, PhD, my former lab director who decided to expand on his already solid biomedical engineering and scientific background by pursuing a Doctor of Dental Surgery degree at NYU. The laboratory has also trained over 100 dentistry interns in the past five years, exposing them to cutting-edge research, while providing critical training in tools and procedures designed to promote their professional growth.

Dr. Cronstein's, Dr. Rodriguez's, Dr. Flores', and my co-piloted efforts have also resulted in the awarding of three NIH diversity supplements to two students from backgrounds traditionally underrepresented in the health sciences. One of these students, Christopher Lopez, an MD candidate at the Icahn School of Medicine at Mount Sinai, has led efforts in my lab to create an undergraduate research pipeline program focusing on underrepresented pre-dental

and pre-medical students in the biomedical sciences with limited access to research opportunities. As a City University of New York (CUNY) graduate, Mr. Lopez's perspective on the lack of resources available for pre-health students in the New York metropolitan area has led to an initiative supported by Dr. Rodriguez, Dr. Flores, Dr. Cronstein, and me that recruits exceptionally motivated, underrepresented students who seek to pursue careers in dentistry, medicine, and the biomedical sciences. The program, currently in its second year, has provided an overwhelming majority of these students with opportunities in research prior to applying to professional school. In addition, Dr. Flores' and my collaborative efforts have led to two dual-degree students (MD and master's degrees in research) receiving mentorship, as well as a Fulbright visiting scholar. The team's efforts on behalf of student research have led to over 20 podium presentations at various national and international dental, medical, and engineering conferences. The group's commitment to training doesn't stop at the undergraduate and dental/medical/graduate student level: Dental and medical residents, clinical fellows, and visiting scholars have also been able to make progress with us toward their career goals.

Thanks to the favorable academic and research environment at NYU and the University's commitment to collaboration across multiple disciplines, the team strongly believes that the future for innovation at NYU is very bright. The bright future of these innovations is underscored by the commitment to the next generation of scientists that New York University's leadership has demonstrated. Ultimately, all members of our research team believe that it is the individuals at every academic level, especially students, who make the group successful. While the leaders guide the learning process, it is the trainees who continue to inspire through hard work, commitment to excellence, and passionate curiosity. ■

3D-Printed Implants Shown To Help Grow “Real Bone”

Chemically coated, ceramic implants successfully guided the regrowth of missing bone in lab animals while “steadily dissolving,” researchers report.

Surgeons and scientists at NYU College of Dentistry and NYU School of Medicine say their implanted scaffolds were naturally absorbed by the test animals’ bodies as new bone gradually replaced the devices. The research team describes its progress in a series of reports, the latest of which appeared in the *Journal of Tissue Engineering and Regenerative Medicine*.

Modeled after the bone pieces they are meant to help replace, the implants were assembled onsite using 3D robotic printing, a technology that uses a fine-point print head to push out a gel-like ink material. The material is printed onto a platform, and the printer repeats the process until 2D layers stack up into a 3D object, which is then superheated into its final ceramic form. Available for more than a decade, the technology has only of late been applied in medicine to print out replacement ears, skin, and heart valves.

“Our 3D scaffold represents the best implant in development because of its ability to regenerate real bone,” says study senior investigator Paulo Coelho, DDS, PhD, the Dr. Leonard I. Linkow Professor of Biomaterials at NYU Dentistry. “Our latest study results move us closer to clinical trials and potential bone implants for children living with skull deformations since birth, as well as for veterans seeking to repair damaged limbs,” he adds.

The scientists say their novel ceramics more closely resemble real bone shape and composition than other experimental bone implants in which plastic elastomers are added to make the implant flex. Although the ability to flex offers some advantages, the plastic does not have the same healing ability as NYU’s scaffold.

An important feature of the ceramic devices is that they are made of beta tricalcium phosphate, a compound of the same chemicals found in natural bone that makes the implants resorbable.

One of the secrets to the rapid growth of native bone with the NYU devices is a coating of dipyridamole, a blood thinner shown in other experiments to speed up bone formation by more than 50 percent. The chemical also attracts bone stem cells, which spur the formation of nourishing blood vessels and bone marrow within the newly grown bone. These soft tissues, researchers say, lend to their scaffold-grown bone the same flexibility as natural bone.

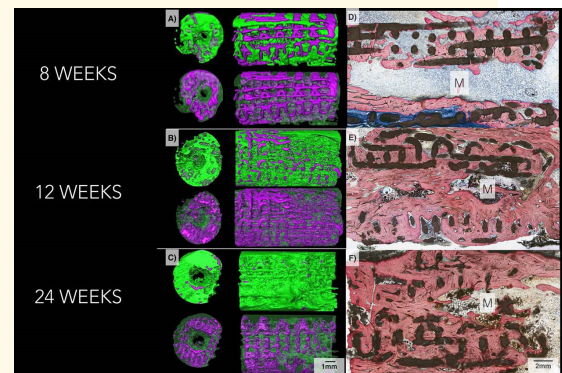
“Dipyridamole has proven to be key to the implant’s success,” says study co-investigator Bruce Cronstein, MD, the Dr. Paul R. Esserman Professor of Medicine at NYU School of Medicine, who perfected the drug’s use during device testing. Used for more than a half-century to prevent blood clots and treat stroke, dipyridamole has a long-standing safety record, says Dr. Cronstein, who also serves as the director of the Clinical and Translational Science Institute, and chief of the Division of Translational Medicine at NYU Langone Health. “And because the implant is gradually resorbed, the drug is released a little at a time and locally into the bone, not into the whole body, thereby minimizing risks of abnormal bone growth, bleeding, or other side effects.”

In the latest experiments, researchers used the test scaffolds to repair small holes surgically made in the skulls of mice and missing bone pieces as long as 1.2 centimeters in rabbit limbs and jaws.

The scientists found that on average 77 percent of each scaffold was resorbed by the mammal’s body six months after implantation. They also found that new bone grows into the lattice-like structural supports of the scaffold, which then dissolves. Some CT scans of the implant sites showed almost no trace of beta tricalcium phosphate, the 3D-printed material of which the original implants were made.

Subsequent weight-bearing tests showed that the new bone was of equivalent strength as original, undamaged bone.

The investigators say their next studies will test the scaffolds, for which they have a patent pending, in larger animals. They caution that clinical trials are still several years away.



Three-dimensional imaging on the left shows how bone, in green, replaced the bioactive ceramic scaffold, in purple, over a six-month period. Microscope images on the right show progressively increasing degrees of bone, stained pink, and lower amount of scaffold, in black, as time goes by in the body.

Photo credit: *Journal of Tissue Engineering and Regenerative Medicine*

Related efforts in skull reconstruction moving forward will be led by plastic surgeons Eduardo D. Rodriguez, MD, DDS; and Roberto Flores, MD, the Joseph McCarthy Professor of Reconstructive Plastic Surgery, who also directs the medical center’s cleft lip and palate program.

Funding support for the study was provided by National Institute of Arthritis, Musculoskeletal and Skin Diseases grant R01 AR068593, and U.S. Department of Defense grant W81X-WH-16-1-0772.

Besides Drs. Coelho and Cronstein, other researchers involved in these experiments — and the principal architects of the computer software and the scaffold’s design and construction — are study co-investigators Lukasz Witek, PhD, and Nick Tovar, PhD, both from NYU Dentistry, and James Smay, PhD, at Oklahoma State University.

A video featuring the research is available at: https://www.youtube.com/watch?v=PWswc4ef_S4. ■

Collaboration Between NYU's College of Dentistry, Tandon School of Engineering, and School of Medicine Aims to Take Specially Treated Alloy from Laboratory to Surgical Suite

Titanium is the preferred material for surgical fixation procedures ranging from knee replacement to jaw implants. However, since this super-strong metal is not absorbed by the body over time, it can cause complications like infection, fistulization (particularly following radiation therapy), interference with skeletal growth, intolerance, thermal sensitivity, and interference with MRI and other imaging procedures. Additional procedures to remove hardware is one of the most common surgeries worldwide and a major cost for hospitals.

A promising alternative is magnesium, a safely biodegradable metal and cofactor for many enzymes in DNA repair that also promotes bone health. But while its physical properties make it suitable for load-bearing sites, such as the temporomandibular region of the jaw, its rapid breakdown in the body sometimes results in the formation of hydrogen bubbles that can lead to serious complications.

In a unique collaboration, researchers at NYU's College of Dentistry, Tandon School of Engineering, and School of Medicine are developing and testing alloys of magnesium that are treated to improve strength and slow down the degradation process, thereby avoiding the formation of these bubbles.

In research published in the *Journal of Cranio-Maxillofacial Surgery*, the team, which includes Nikhil Gupta, PhD, associate professor of mechanical and aerospace engineering at NYU Tandon; Paulo Coelho, DDS, PhD, the Dr. Leonard I. Linkow Professor of Biomaterials at NYU Dentistry; Eduardo D. Rodriguez, MD, DDS, Helen L. Kimmel Professor of Reconstructive Plastic Surgery and chair, Hansjörg Wyss Department of Plastic

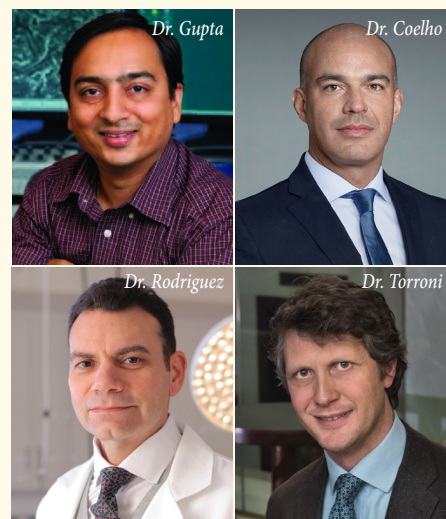
Surgery at NYU School of Medicine; and Andrea Torroni, MD, PhD, associate professor, Wyss Department of Plastic Surgery at NYU School of Medicine, reported on their tests of a magnesium alloy that was subjected in Dr. Gupta's lab to a process called T-5 tempering, involving heating at 210 degrees Celsius for 48 hours.

After surgically implanting small samples of the alloy in the fronto-nasal region of study animals, the team examined the accumulation of the element in the lymph nodes, finding no difference between animals with no implants and the study animals. The researchers also implanted untreated — or “as-cast” — alloy, finding that both the as-cast samples and T-5 heat-treated alloys showed good biocompatibility and promoted bone growth in test animals. The T-5 alloy, however, was much more stable, with an eight-fold lower degradation rate than the as-cast alloy.

Dr. Gupta said he was not surprised by the positive results, as they mirrored what he had observed during in vitro studies at NYU Tandon.

“In our lab we put both as-cast and the heat-treated alloy in a solution of sodium chloride to simulate body fluid environments. Not surprisingly, the as-cast version corroded a lot. However, the heat-treated version did not corrode at all,” he said. “What we have discovered is that by employing heat treatment we can change the alloy completely from a degradable, resorbable structure to one that doesn't degrade over time. In essence, heat treatment makes magnesium behave, in vitro and in vivo, more like titanium.”

Dr. Torroni thinks the results auger well for eventual clinical applications of T-5 magnesium, even in mandibular fractures, where stress on bone is particularly high. “The T-5 is really

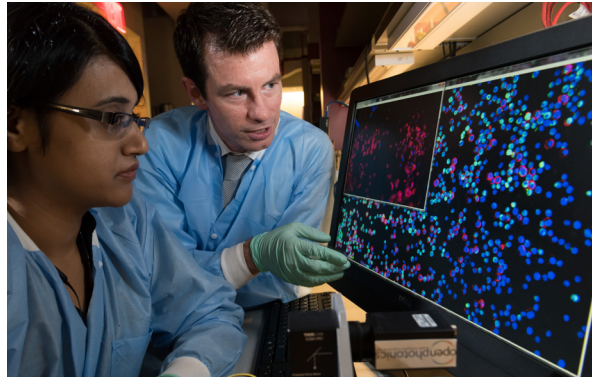
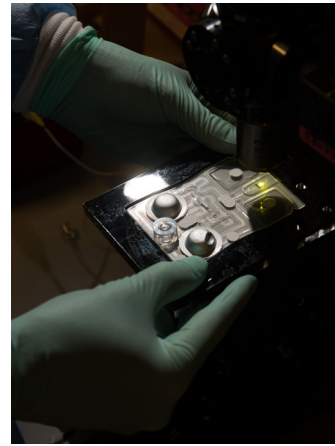
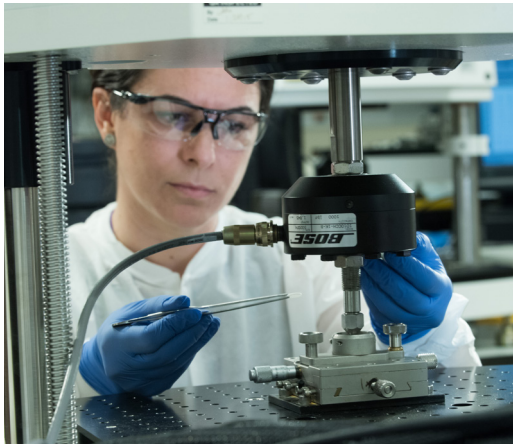


the best candidate for these high-stress applications. It has superior properties that are very close to those of bone and is very good for fixation of fractures,” he explained. “It exhibits lower long-term risks because it resorbs. And it can promote bone formation and bone healing. It is totally biocompatible with no risk of rejection, and limited risk of infection.”

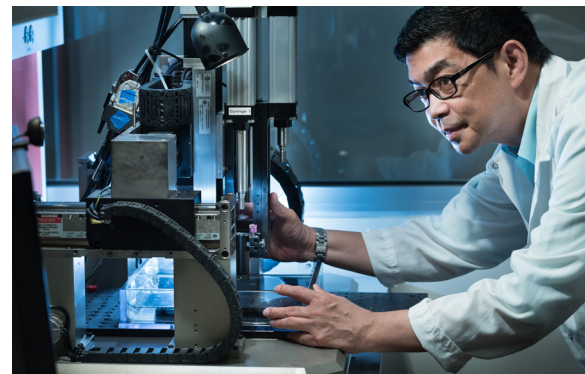
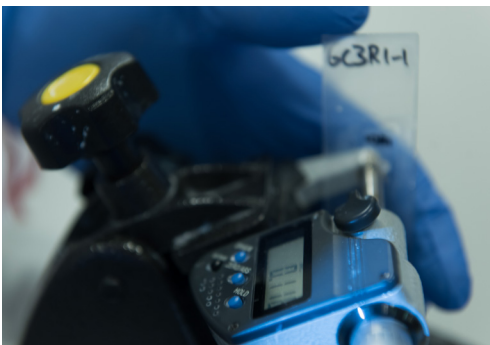
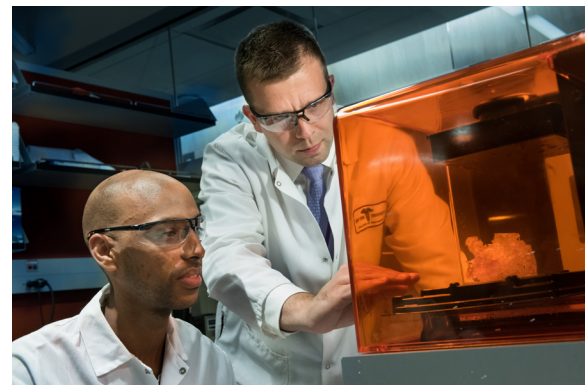
The team also discerned no post-surgical morbidity, even in the control animals that received implants of untreated magnesium.

“Because of magnesium's systemic absorbability, this is not a problem,” said Dr. Coelho. “The key idea is to make an implant that can be either non-absorbable, as a permanent support, or absorbable, like sutures that go away after some time.”

Dr. Gupta said that the research wouldn't have been possible without collaboration between NYU institutions. “The breadth of this research takes it from the lab all the way to a clinical setting,” he added. ■



BIOMATERIALS: IN THE DEPARTMENT





The Department of Biomaterials' Quest To Improve Healthcare on a Global Scale

by

John T. McDevitt, PhD
Professor and Chair
Department of Biomaterials
NYU College of Dentistry

**“The department is connecting the dots
among a wide variety of engineering,
medical, dental, and scientific areas to
create a rich environment for discovery.”**

— Dr. John McDevitt

I welcome this opportunity to provide an overview of the work being done by the NYU College of Dentistry Department of Biomaterials to improve medical and dental practice at the global level.

We are privileged to have at the College an interdisciplinary group of researchers whose backgrounds and expertise align with key priorities in bioengineering today, including dental implants and prostheses, bio-imaging, bio-printing, bone-soft tissue interfaces, bioinspired materials synthesis, biosensors, and biomechanics. Such a high profile program allows us to create bridges among nanotechnology, dentistry, nursing, and bioengineering with an emphasis on the development of a new biomaterials base for enhanced human health.

Our faculty are developing chip-based sensors that are fused with artificial intelligence. They were the first to profile the full elemental composition of water samples. The department is also developing novel 3D-printing methods to fabricate bones and teeth, next generation dental implants, and a new materials base for all-ceramic restorations. Indeed, the department is connecting the dots among a wide variety of engineering, medical, dental, and scientific areas to create a rich environment for discovery.

We gain added strength from the fact that our department is strategically located across the street from NYU Langone Health in the heart of Manhattan’s East Side medical corridor. In addition to the fruitful collaborations that we have forged with Langone, we have also es-

tablished strong ties to the NYU Tandon School of Engineering, where we form an integral part of the NYU Bioengineering Institute.

Our state-of-the-art biotechnology programs are structured into distinctive research groups named for their lead scientists. These groups focus on efforts to integrate the life sciences with physical, bioengineering, and computational science. In addition to the McDevitt Research Group, which focuses on sensors that learn, they include the Coelho Research Group, which undertakes 3D-printing of 21st century medical devices; the Ricci Group, whose projects include developing controlled micro-texture surfaces for dental implants that promote bone, connective tissue, and epithelial attachment; the Zhang Research Group, which is developing improved materials for restorative dentistry that are both resilient and aesthetically pleasing; and the Bromage Research Group, which is studying water as a source for understanding how an ecology or an environment actually works.

As the work of Drs. Coelho, Ricci, Zhang, and Bromage are featured elsewhere in this issue, I will leave it to them to discuss their individual projects. Let me instead offer a capsule summary of my own research.

The McDevitt Research Group

The McDevitt Group specializes in the development of state-of-the-art multi-parameter point-of-care diagnostic solutions that relay test information directly to patients and healthcare

providers using intuitive mobile health (mHealth) interfaces. Leveraging strong foundations in nanoscience and engineering, microfabrication, microfluidics, biosensors, clinical chemistry, and artificial intelligence, the McDevitt laboratory over the past decade has pioneered the development of the programmable bio-nano-chip (p-BNC) sensor platform. This mini-detection ensemble with multiplexed and multi-class (cellular, genomic, proteomic) capabilities has been customized for cancer diagnostics, cardiovascular disease, saliva-based diagnostics, infectious diseases, drugs of abuse detection, and cell imaging systems, including the development of “pathology on a chip.”

The McDevitt laboratory has gained in-depth experience with management and execution of international prospective clinical studies for the p-BNC that resulted in the collection of unique databases and defined first-in-kind disease-wellness signatures for oral cancer and cardiac disease progression. Machine learning methods have been applied to extract accurate disease progression calculators which are now being validated clinically. These are sensors that learn.

For a fuller discussion of this research, please visit https://dental.nyu.edu/content/dam/nyudental/documents/Nexus29_S2016.pdf (p. 20).

As you read about the work of my departmental colleagues, I hope you will agree that the NYU Department of Biomaterials is setting the agenda for biomaterials research and application in the 21st century. ■



Development of a Revolutionary Implant Surface: *From Benchtop to Clinical Use*

by

John L. Ricci, PhD, FBSE

Associate Professor of Biomaterials
Director, MS Program in Biomaterials
Department of Biomaterials
NYU College of Dentistry

“The combination of the right researchers, the right university environment, and high quality corporate partners led to an innovative series of products that have changed the way we think about hard and soft tissue integration of dental implants.”

— Dr. John Ricci

The materials science revolution has had a tremendous impact on everything from smartphones to roof tiles, and especially on biomaterials and the medical device field. Revolutionary materials fabrication and processing technologies have led to 3D-printed metal orthopedic devices, nano-reinforced dental restorative materials, and, in one case, a laser micromachined implant surface for dental implants developed at NYU Dentistry.

This project has a long history. It started in the early 1990s as a basic science study of the effects of surface microstructure of biomaterials on cell and tissue interaction. We knew that cells and tissues responded differently to roughened surfaces compared with polished surfaces, but did not know how or why. So, we began by comparing the response of different types of cells to roughened and smooth surfaces. We then started producing surfaces with very controlled microstructures, using silicon wafer technology similar to that used in microelectronics, and ended up with a fairly deep understanding of the relationship between basic cell behavior and surface microstructure.

A significant hurdle presented itself when we decided to try to produce controlled microstructures (in this case cell-sized microchannels) on a titanium alloy surface that could be used as a medical device. Titanium alloy is used to produce components of total joint replacements as well as of dental implants and so was the best candidate material for application of these surfaces. Working with a laser physicist, we were able to develop proprietary techniques to produce these microstructured surfaces, which were patented through NYU. The new technique involved the use of a particular type of laser technology to shape the titanium surface with 1/1000 of a millimeter precision. In 1996, we began to test tissue response to these surfaces in a variety of animal models.

The early results were not what we

expected. We observed that while our surfaces were designed to integrate with bone, a process called osseointegration, these surfaces not only integrated with bone, but also attached to soft tissues such as fibrous connective tissue and epithelium. So, while these surfaces were originally destined for use on orthopedic implants, the results suggested a better application.

Dental implants are transmucosal. Their base is in bone, crosses through the gingiva, and extends into the oral cavity. The success of dental implants is based not only on osseointegration, but also on the biologic seal formed by the attachment of fibrous and epithelial soft tissue. In the past, maintenance of this biologic seal has been problematic, and breakdown has led to peri-implant mucositis and peri-implantitis. So this new surface, with its unique tissue attachment properties, represented an accidental if fortuitous solution to an existing problem in a field for which it was not originally intended.

This surface was radically different from anything that was in use at that time, and still is. Its use on the collar of a dental implant, the portion that crosses the soft tissue barrier, was a controversial concept. The most difficult step in moving any new technology from benchtop to clinical use is the “valley of death,” the gap between development of a technology and bringing it into clinical use, which requires collaboration with industry and significant funding which is not provided by the basic science grants that allowed the development of the concepts behind the surface. We were able to use funding sources for product development — SBIR (Small Business Innovative Research) and STTR (Small Business Technology Transfer) grants from NIH and NSF — to reach the next level in development and application of these surfaces.

Finding a corporate partner to do the initial clinical work is often the most difficult hurdle in this process and it was made more difficult, in this case, because what we were suggesting was both different from the current para-

digm and controversial. But we found a business partner in 1999, in the form of a small dental implant company (BioLok International) that was willing to try these surfaces on their implants. Work with BioLok was successful and led in 2004 to FDA approval of implants with these surfaces. This was the first laser micromachined tissue engineered surface approved by the FDA. The results of our initial clinical studies led to a merger with BioHorizons, Inc., a much larger presence in the implant industry and an excellent, science-driven partner. This surface (now called the Laser-Lok™ surface) has been very successful, and 14 years of clinical use on dental implants has led to more than 60 published papers.

The process of basic science research leading to the development of a product involves many difficult steps and is a long process. While this process began in 1992, it continues today as we work on next generation surfaces using newer technology. While we were successful in the development of this series of products, the project might have been derailed at many points. That this did not happen testifies to the persistence of our team of researchers, the environment at NYU, and a little luck. NYU fosters the type of innovation that ultimately led to the successful collaboration with our industry partner. NYU’s reputation as a source of innovative technology and the University’s Office of Industrial Liaison played a large part in the resulting clinical collaboration.

Ultimately, the combination of the right researchers, the right university environment, and high quality corporate partners led to an innovative series of products that have changed the way we think about hard and soft tissue integration of dental implants. This has also changed our overall view regarding surface processing of biomaterials and medical devices. It is virtually certain that these concepts will be applicable to other medical device fields. This is only the beginning. ■

A portrait of Yu Zhang, PhD, a man with dark hair and glasses, wearing a dark suit, white shirt, and a patterned tie. He is smiling and looking directly at the camera. The background shows a laboratory setting with various pieces of equipment, including a large microscope or imaging system on the right and a smaller device on the left. The lighting is soft, highlighting his face.

Developing New Ceramic Materials for Dental Restorations

by

Yu Zhang, PhD

Associate Professor of Biomaterials
Director, Nanomaterials and Mechanics
Laboratory
Department of Biomaterials
NYU College of Dentistry

“Research efforts undertaken by our group focus on addressing the challenges in zirconia translucency, shade selections, bonding, and fracture resistance by developing novel materials, new surface modification techniques, and clinically relevant testing methods.”

— Dr. Yu Zhang

Restorative dentistry is undergoing a rapid paradigm shift toward all-ceramic restorations, partially for their strength and bioinertness but more so for their aesthetics.

Thus, the development of strong yet aesthetic ceramic materials has become a priority. However, challenges abound.

Ceramics are brittle and susceptible to fracture. Of all the restorative ceramics, yttria stabilized zirconia, also known as 3Y-TZP, are the most robust. The main attraction is their exceptional mechanical properties, as well as their biocompatibility and resistance to corrosion. But the greatest challenge is to produce them with sufficient translucency and adequate shade selections. For better aesthetic outcomes, strong 3Y-TZPs often require a porcelain overlay, and clinical research and practice have shown that while zirconia frameworks are very fracture resistant, chipping and delamination of the porcelain veneer are frequent problems. In addition, dental prostheses are luted to prepared tooth structures or implant abutments. Thus, the key to the long-term clinical success of dental restorations would appear to be a strong and robust resin-restoration bond. Porcelain and glass-ceramics can simply be acid etched and silanized to achieve a durable adhesion with resin cement. But

it is challenging to establish a strong resin-zirconia bond, since the conventional etching-silane chemistry is not effective with zirconia, as it is chemically inert.

Accordingly, research efforts undertaken by our group focus on addressing the challenges in zirconia translucency, shade selections, bonding, and fracture resistance by developing novel materials, new surface modification techniques, and clinically relevant testing methods. We are conducting fundamental research which has successfully attracted four NIH/NIDCR R01 grants since 2007.

Exploring the Potential Benefits of Glass Infiltration

One approach to achieving a more aesthetic zirconia without compromising mechanical properties involves infiltrating the outer surface with a feldspathic glass, producing a cross section with a graded composition. Appropriate glass infiltration reduces the elastic modulus at cameo and intaglio restoration surfaces, closer to values for dental porcelain and glass-ceramics, with consequent diminishment of tensile stresses at the intaglio cementation surface where bulk fracture initiates. Important side benefits of glass infiltration include a substantial increase in resin bond strength at the cementation interface and the capacity to build in

shade matching at the cameo surface.

Examples of anatomically-correct crowns and frameworks infiltrated with feldspathic glass of various shades are shown in Fig. 1. A cross-sectional view of such a glass-infiltrated zirconia is also included, along with a plot showing the corresponding gradation in elastic modulus. Fracture tests on infiltrated prostheses relative to their uninfiltrated counterparts indicate significant increases in load-bearing capacity under both single- and multi-cycle loadings.

There are ongoing efforts in our lab to optimize the infiltration protocol using alternative glasses and heat treatments. Care needs to be taken in selecting the right glass composition to achieve wetting and to avoid generating residual stresses within the material.

Penetrating the Mystery of Why All-Ceramic Restorations Fracture

What is missing from clinical studies is a fundamental understanding of the various mechanisms by which all-ceramic restorations fracture, especially in long-term cyclic loading. We have developed clinically relevant tests on anatomically-correct prostheses using a mouth-motion simulator. Examples of crack systems in all-ceramic prostheses are included in Fig. 2, for crowns loaded

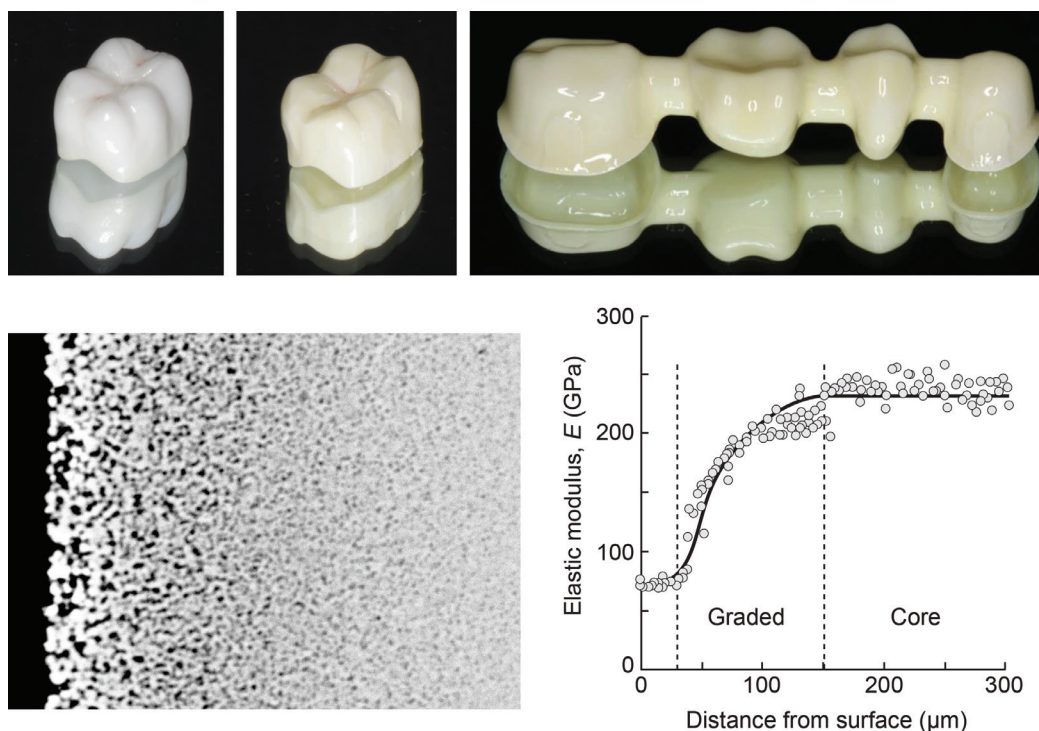


Fig. 1. Fabricated anatomically-correct crowns and a framework (Top row, left to right—graded white, graded tinted, graded tinted). Bottom row: cross-sectional image of 3Y-TZP after surface infiltration with glass (dark region at left is the residual glass layer) along with its corresponding profile of elastic modulus (vertical dashed lines delineate glass layer, graded and core regions).

vertically at the lingual aspect of a buccal cusp with sliding motion toward the central fossa, and for a 3-unit bridge loaded at the buccal cusp of the pontic. In general, damage begins at either the top occlusal or intaglio cementation surface, or, in some cases, at the margins.

These kinds of ex vivo tests are still in progress; new damage modes — deep penetrating inner and partial cone cracks (under cyclic loading in wet environments) — have been identified and analyzed. Equally important, we have demonstrated that sandblasting using airborne alumina particles should be used with great care on high strength dental ceramics, such as zirconia, alumina, and glass-ceramics, as it significantly decreases fatigue life. Dental manufactur-

ers are now recommending alternative techniques to bond these high strength restorations to tooth structure.

Developing a Comprehensive Knowledge of the Multiple Reasons for the High Veneer Chipping/Fracture Rate

One of the primary reasons for the poor clinical performance of porcelain-veneered zirconia (PVZ) bilayer prostheses is the low thermal conductivity of zirconia core relative to the metal coping, which could result in a large temperature gradient in the porcelain veneer on cooling, and thus residual thermal stresses could become locked into the material system. While it is evident that the high veneer chipping/fracture rate is due predominantly to these residual

stresses, a comprehensive knowledge of the governing material, design, and processing parameters remains largely absent. Our team proposes to develop a viscoelastic graded finite element method (VGFEM) to accurately predict residual stresses and optimize the residual stress profiles in PVZ and porcelain-veneered lithium silicate (PVLDS) prostheses. We also propose to create a graded veneer/core interface. A gradual transition of material composition and thermo-mechanical properties at the veneer/core junction can enhance the bond strength, thus increasing fracture resistance. The graded interface design may be considered as analogous to the dentin–enamel junction in teeth.

This continues to be an active research

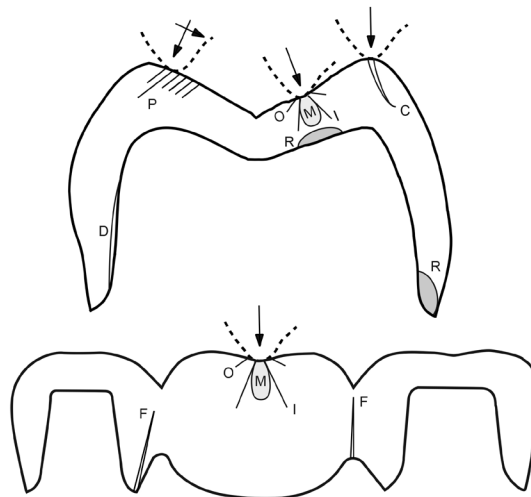


Fig. 2. Schematic diagram depicting various fracture modes in all-ceramic prostheses from tensile stresses at the occlusal surface and cementation interface. Full cone cracks outside (O) and within (I) contact zone; median cracks (M) beneath contact; partial cone cracks (P) from sliding; chipping cracks (C) adjacent to the side wall; flexure radial cracks (R) at the cementation surface, either below the contact or at the margins; delamination cracks (D) at the cementation/substrate interface; and flexure cracks (F) at connector sites.

area. The end goal is to achieve porcelain-fused-to-metal equivalent resistance to veneer chipping and fracture in PVZ and PVLDS. The development of VGFEM is also expected to substantially improve the accuracy of predicting residual stresses and improving fracture resistance in an array of high-temperature applications, including thermal barrier coatings and solid oxide fuel cells.

Seeking a Better Way To Increase Translucency in Zirconias


After a decade of research and development, progress has been made in improving the translucency of Y-TZP by reducing porosity, decreasing grain size,

and eliminating alumina sintering additives. However, close examination has revealed that unless they are thin (i.e., <0.5 mm), so-called commercial translucent Y-TZP restorative materials remain largely opaque. The current approach to this problem is to introduce an optically isotropic cubic zirconia phase into an ordinarily tetragonal material. However, biphasic tetragonal/cubic zirconia is weaker and more brittle compared to its tetragonal counterpart.

We have indicated the limitation to translucency in zirconias owing to the birefringent characteristic of tetragonal zirconia. Therefore, a better way to increase transmittance of Y-TZP is to reduce

grain size well below the wavelength of visible light. Consideration of classic light scattering models indicates that a grain size below 100 nm is necessary to produce an acceptable transmittance in Y-TZP ceramics.

This area of research is in its infancy, but early studies are confirming feasibility. They are demonstrating substantial improvements in translucency, at the same time preserving, even enhancing, strength properties. Attention to specific details in powder selection and preparation, yttria and other dopant content, green compact homogeneity, sintering temperatures, and post-sintering coloration treatments remain to be optimized. ■



H₂O+?

*Dr. Timothy Bromage Investigates the
Elements Found in Water*

**"This is the most exciting research space to occupy;
nearly everything we look at contains a surprise."**

— Dr. Timothy Bromage

Water is one of the most important substances responsible for life, and recently has become the focus of an NYU Dentistry research team that usually studies bone and tooth biology.

"In my work as a human paleontologist working at sites in Africa, we developed an acute interest and focus in the paleoecology: What was the environment like millions of years ago for early humans? That then got me thinking about water as a source for understanding how an ecology or an environment actually works," Dr. Bromage said.

For instance, by sampling water from a lake or river and measuring the elements across the periodic table in that water, you are measuring the elements that become incorporated into all life, from plants to animals to humans.

"The water is an arbiter of how a system works. If we were to study the elemental composition of water from a variety of environments, and then take this to early human fossil localities and retrodict what the nature of the water was at that time, we could explain something very intimate about an environment," said Dr. Bromage.

Technological Advances

Until recently, this type of research would have been extremely time consuming and cost prohibitive, as technology to measure the elements of the periodic table typically test one element at a time. However, Dr. Bromage's lab recently became home to a simultaneous-inductively coupled plasma-mass spectrometer, which can measure the full spectrum of elements all at once.

The mass spectrometer is presently one of only 26 such instruments in the world that can make simultaneous, relative measurements of the complete inorganic spectrum from lithium to uranium, and the only mass spectrometer in the world that makes absolute concentration measurements of all 71 of the 76 elements that may typically appear in water.

Because of the simultaneous nature, "we're able to measure the elements in far less time, at far less expense, using far less material for making the investigation," Dr. Bromage said.

What's in My Water?

When toxins and other contaminants are introduced into the environment and into water, either by human activity or by a natural disaster like flooding, it can threaten human health. In addition to using the mass spectrometer to investigate paleoecology, Dr. Bromage is also studying water from different environmental and industrial sources in order to map the natural element variability and kinds of contamination in the environment.

"We collected bottled waters from around the world, somewhere between 60 and 80 samples, to begin to understand how the bottled water system works and how the complete periodic table is distributed among them," Dr. Bromage said.

The researchers were able to identify a unique "fingerprint" for each bottled water. Using big data statistical methods, they were able to separate bottled waters into those originating in volcanic rock versus those originating in limestone, which are alkaline rock.

"We could take a bottled water — any of those that we studied — and could test it again, and we would know it was a specific bottled water," said Dr. Bromage.

The researchers also found a third group of bottled waters: municipal waters that are treated and filtered.

"Because manufacturers want that bottled water to have a 'water' taste, often elements are added back in, particularly after having been depleted through their filtering procedures. There's a similarity among municipal waters because of the artificial treatment that they've received," said Dr. Bromage.

In addition to fingerprinting the water to understand its source, a preliminary analysis of bottled waters found considerable variation in elements present. For instance, several bottled waters exceed the amount of sodium permitted in

drinking water by the U.S. Environmental Protection Agency (EPA) — a potentially problematic issue for someone suffering from hypertension.

The EPA monitors and regulates only 19 elements in water, although many other elements can have health consequences but are not currently being tested. For example, while lithium is known to be toxic to embryos and life threatening in high doses, but has psychotherapeutic benefits in lower doses, its concentration in drinking water is neither monitored nor regulated.

To help interested individuals learn what elements are in their local waters — environmental, municipal, or bottled — Dr. Bromage founded Stoichy (stoichy.com), a nonprofit project with the goal of contributing to water safety and improved health. Individuals can send samples to Stoichy to be tested using the mass spectrometer.

Future Research

In addition to testing water from different sources, Dr. Bromage is also beginning to explore the elements found in milk and wine. Milk, for instance, may incorporate new elements either through cows and their diets or through human processing, and is particularly important to study given its consumption by children. Wine samples from around the world tell a global story about the environment from which the wine grapes grew.

While these projects are beginning to yield interesting findings, they raise more questions than they provide answers, given that researchers have not tested materials for such a wide range of elements in the past.

"We're in the business of discovering what we don't know we don't know. By having a machine that can measure the breadth of the periodic table in seconds, what comes at us is information about a lot of things that we didn't know we didn't know," Dr. Bromage said. "This is the most exciting research space to occupy; nearly everything we look at contains a surprise." ■

Academy of Distinguished Educators Inducts New Members

Four new members and three fellows were inducted into the NYU Academy of Distinguished Educators in fall 2017-18. The inductees were Dr. Yvonne De Paiva Buischi, clinical associate professor of periodontology and implant dentistry (member); Dr. Kenneth E. Fleisher, clinical associate professor of oral and maxillofacial surgery (member); Dr. Marci H. Levine, clinical assistant professor of oral and maxillofacial surgery (member); and Dr. Ryan Richard Ruff, assistant professor and director of the biostatistics core in the Department of Epidemiology & Health Promotion (member). Fellows inducted in 2017 were Dr. Ivy Peltz, former clinical associate professor of cariology and comprehensive care; Dr. Stefanie Russell, clinical associate professor of epidemiology & health promotion; and Dr. Silvia Spivakovsky, clinical associate professor of oral and maxillofacial pathology, radiology and medicine.



From left: Dr. Fleisher, Dr. Levine, Dr. Russell, Dr. Spivakovsky, outgoing Academy Chair Dr. Veitz-Keenan, and Dr. Ruff. Not pictured: Drs. Buischi and Peltz.

College Hosts Project Accessible Oral Health: Enhancing the Wellness of People with Disabilities



"Working Together for Successful Collaborations" panelists, from left: Dr. Jeff Hicks, President, Special Care Dentistry Association; Dr. Debra Cinotti, Associate Professor, Stony Brook University School of Dental Medicine; Dr. Maureen Perry, Past President, Special Care Dentistry Association; Dr. Scott Howell, Board of Directors, Special Care Dentistry Association; Dr. Stephen Beetstra, Director of Dental Services, Arkansas Children's Hospital.

In fall 2017, the College hosted the second day of a two-day meeting to kick off Project Accessible Oral Health (PAOH), an international public-private partnership to raise awareness of and address the significant need for increased oral healthcare for people with disabilities, with the aim to improve their overall health and quality of life.

The meeting convened many of the world's foremost experts from the fields of dentistry and disabilities-focused healthcare, as well as dental educators, advocates, and members of the disabilities community, public health and policy experts, and representatives from the dental industry. Together, these stakeholders explored ways to improve access to oral healthcare for people with disabilities while advancing oral health literacy among the broader community.

Faculty Council Teaching Award Winners

Each year, the College's Faculty Council recognizes excellence in teaching and mentoring. The 2017 award recipients, shown from left, were Dr. Winifred A. Montuori, adjunct clinical instructor of cariology and comprehensive care; Dr. Samar Tannous, clinical instructor of cariology and comprehensive care; Dr. Kenneth S. Magid, adjunct associate professor of cariology and comprehensive care; Dr. Barbara D. Slaska, clinical assistant professor of cariology and comprehensive care; Dr. Natalia Elson, clinical assistant professor of cariology and comprehensive care; Mr. Eric Baker, clinical associate professor of basic science and craniofacial biology; Dr. Xin Li, associate professor of basic science and craniofacial biology; Dr. Fabiola Milord, clinical instructor of cariology and comprehensive care; and (not shown) Dr. Leslie A. Abraham, clinical assistant professor of oral and maxillofacial surgery. The winners received their awards at a ceremony held in conjunction with Faculty Welcome Month in September.



New College Initiatives Are Focus of Visit by California Dental Association Officials and California State Legislators

A delegation of California Dental Association (CDA) officers and California State legislators visited the College in October, 2017, marking the 5th consecutive year of CDA visits to participate in an Oral Health Education forum hosted by Dean Bertolami. This year's forum included 16 NYU Dentistry students who hail from California. They were: James H. Chao, '18, Bahram Danaei, '18, Nima Harouni, '18, Amanda M. Muzzio, '18, Justin Shyu, '18, Benjamin Estrada, '19, Nicole C. Liu, '19, Michelle Michelson, '19, Olivia M. Nguyen, '19, Tuan M. Thai, '19, JoyAh Brooks, '20, Silvia Castro, '20, Steve Deng, '20, Gene Park, '20, Jesse Rosete, '20, and Elizabeth Wang, '20.

Presenters Dr. Richard Niederman and Dr. Alexis Cohen spoke about the "CariedAway NY" project, which aims to compare the effectiveness of two cavity-prevention techniques — a "simple" treatment of silver diamine fluoride and fluoride varnish, and a "complex" treatment of traditional sealants and fluoride in 60 high-need elementary schools in the Bronx.

Speaking about "Integrating Oral and Medical Health Services — Lessons Learned and Future Plans," Executive Vice Dean Michael P. O'Connor reported that lessons learned from operating a fully medically-equipped nurse practitioner clinic housed within the Schwartz Building from 2005 to 2015 place the College in an excellent current position to partner with Metro Community Health Centers to provide a Manhattan location for patients with disabilities to access primary health care. These patients will also be able to receive dental care in a new state-of-the-art Oral Health Center for People with Disabilities, which is being built on the 8th floor of the Weissman Building. (See *related story* on p. 54.) The presentation also featured remarks by Marco Damiani, former CEO of Metro Community Health Centers and current CEO of AHRC, an organization devoted to care for the disabled, who spoke about his expectations for the partnership.

Amanda Muzzio, DDS '18, spoke movingly of "A New Approach to Special Needs Patients," which described the education and training she received as an honors student in

the Special Patient Care Program and how that experience is enabling her to provide better care for her patients with disabilities. One of those patients joined the presentation to laud the care he has received at NYU Dentistry.

The program concluded with a presentation by Assistant Dean for Allied Health Programs Dr. Cheryl Westphal Theile on the College's new Dental Assisting Certificate program.

The California delegation included Senator Ben Allen, Senator Toni Atkins, Assembly Member Heath Flora, Assembly Member Todd Gloria, Assembly Member Chad Mayes, Senator Richard Pan, Senator Henry Stern, Peter A. Dubois, CDA executive director, Robert Hanlon, DMD, chair of the CDA Political Action Committee and a member of the Government Affairs Council, David Desko, DDS, dental director and senior vice president of HealthPartners, Carrie Gordon, CDA chief strategy officer, Richard Stapler, CDA vice president for public affairs, Brianna Pitman, CDA legislative director, and Todd Robertson, CDA public affairs manager.

Dean's Guest Lectures

The Dean's Guest Lecture Series for 2017-2018 was presented by six distinguished scholars, clinicians, and researchers. They were Sonia Angell, MD, Deputy Commissioner, Division of Prevention and Primary Care, NYC Department of Health & Mental Hygiene, on "Advancing Health One Population at a Time: NYC Department of Health in Action"; Steven Koonin, PhD, director of the NYU Center for Urban Sciences & Progress (CUSP), on "Certainties and Uncertainties in Our Understanding of the Earth's Changing Climate and Its Response to Human Influences"; Alexander Holden, BDS, LL.M., lecturer in dental ethics, law, and professionalism at The University of Sydney, on "Ethics and Professionalism in Dentistry in the 21st Century"; Jeremy J. Mao, DDS, PhD, professor and Edwin S. Robinson Endowed Chair at Columbia University, on "Tissue Regeneration: Bridging Biology, Engineering, and Clinical Practice"; Karl Haden, PhD, president, Academy for Advancing Leadership, on "Nine Virtues of Exceptional Leaders"; and Shazid R. Aziz, DMD, MD, president and cofounder of Smile Bangladesh, on "Cleft Surgery in Bangladesh."



*From top:
Dr. Angell, Dr. Koonin, Dr. Holden,
Dr. Mao, Dean Bertolami with Dr. Haden,
and Dr. Aziz.*



Dr. Tejal Gohil is 2018 Litvak Fellowship Recipient

Dr. Tejal Gohil, a second-year postgraduate student in the Jonathan and Maxine Ferencz Advanced Education Program in Prosthodontics, is the 2018 recipient of the Dr. Harold Litvak Junior Fellowship in Prosthodontics. Each year, the Litvak Fellowship is awarded to the second-year postgraduate student in prosthodontics who has earned the highest academic standing.

Dr. Gohil earned her BDS degree from the University of Nairobi, Kenya. After one year of government service and private practice in Kenya, Dr. Gohil joined NYU Dentistry in 2014 as a student in the Program for International Dentists in Prosthodontics, followed by a fellowship in prosthodontics awarded by that program. In 2016, she entered the Jonathan and Maxine Ferencz Advanced Education Program in Prosthodontics.

"Dr. Tejal Gohil is a remarkable person with a dream to bring back the knowledge she gained at NYU Dentistry to Kenya. Her goals are to deliver the highest quality care for patients, especially for those with oral cancers or trauma. We are proud of her accomplishments and glad to be part of her dream," said Dr. Mijin Choi, clinical associate professor and director of the Jonathan



and Maxine Ferencz Advanced Education Program in Prosthodontics.

The Litvak Fellowship was established in 1999 through a generous grant from Mrs. Adele Block in honor of her dentist, Dr. Harold Litvak, an adjunct clinical professor

of prosthodontics and a generous donor to the College. Mrs. Block is a member of the family that owned the Block Drug Company, Inc., a major producer of oral and general healthcare products, which is now a division of GlaxoSmithKline.

16th Annual Implant Alumni Symposium Draws Alumni from 27 Countries

On November 10, 2017, over 150 implant program alumni from 27 countries, pre- and postdoctoral dental students, international programs students, master of science degree candidates, prospective students, faculty, and guests attended the College's 16th Annual Implant Alumni Symposium. The symposium, co-hosted by the Office for International Programs and the Ashman Department of Periodontology & Implant Dentistry, included presentations by alumni from 7 countries and concluded with a reception at the Manhattan Penthouse.

16TH ANNUAL
IMPLANT ALUMNI
SYMPOSIUM



2018 NYU President's Service Awards



Top: Serena Simone, '18 with President Hamilton.

Right: Kevin Fernando, '18, President Hamilton, Raveena Singh, '18.

Serena Simone, '18, Raveena Singh, '18, and the NYU Dentistry Student Council were honored at the 2018 NYU President's Service Awards for outstanding service to the University and to the broader community. Dr. Simone was recognized as an individual recipient in the Community Service and Civic Engagement Award category for her commitment to outreach programs in Nepal and the Bronx. Dr. Singh, NYU Dentistry Student Council president, was recognized in the Individual Award Recipient category for her passion for leadership and generous contributions to the dental student body. The NYU College of Dentistry Student Council was recognized in the Leadership and Campus Programming Award category for its efforts to increase community, camaraderie, and support among students.



Oral Cancer Walk 2018 Raises More Than \$30,000

On Sunday, April 29, 2018, students, faculty, staff, alumni, and oral cancer survivors and their families participated in the College's annual NYU Oral Cancer Walk, in support of the NYU Oral Cancer Center.

More than 600 people registered for the 3-mile walk, which raised over \$30,000 for oral cancer research. As part of the day's program, free oral cancer and general health screenings were available to the public.



Dean's Student Awards

Sixty-two Class of 2018 DDS students received Dean's Student Awards on May 4, 2018, in recognition of their outstanding academic and public health achievements. In addition, a Dean's Student Award went to one member of the DDS Class of 2019, and more than 400 peer mentors, peer tutors, admissions ambassadors, and teaching assistants were recognized at the annual awards event.



Office for International Programs Hosts Certificate Ceremony

The Office of International Programs hosted a Certificate Ceremony in June at Cipriani 42nd Street to celebrate the achievements of 48 students and 5 fellows from 25 countries who received certificates of program completion.



DDS Class of '20, Dental Hygiene Programs, and Advanced Standing Program Class of '20 Hold White Coat Ceremonies

The DDS Class of 2020 White Coat Ceremony was held on January 16, 2018, at the NYU Skirball Center for the Performing Arts. Faculty, family, and friends joined in the annual celebration signifying students' entry into the clinical care phase of their journey toward becoming dentists. Family members and friends were also invited to attend a White Coat Symposium and Open House. >

The Dental Hygiene Programs' White Coat Ceremony was held on January 18, 2018. A total of 82 BS and AAS degree students in dental hygiene were honored at the annual event, which recognizes students' entry into the clinical portion of their studies and their commitment to providing quality patient care. v



Members of the Advanced Standing Program Class of 2020, consisting of 10 internationally-trained dentists, were celebrated at a White Coat Ceremony held on June 27, 2018. Faculty, family, and friends joined the event, which commemorates the start of the Advanced Standing students' clinical dental education in the US.

Dr. Ralph V. Katz Receives Honorary Degree from Trinity College

Dr. Ralph V. Katz, professor of epidemiology and health promotion, received a degree of Doctor of Humane Letters, honoris causes, from Trinity College at the 192nd Trinity College Commencement held in May 2018.

Dr. Katz, who graduated from Trinity in 1968 with a bachelor's degree in biology, went on to earn a DMD degree from Tufts University School of Dental Medicine and MPH and PhD degrees in dental public health, and in epidemiology, respectively, from the University of Minnesota. He coauthored "The Tuskegee Legacy Project,"

which shined a light on the recruitment and retention of minorities in biomedical research studies.

Dr. Katz is the founding chair of NYU Dentistry's Department of Epidemiology & Health Promotion, and has received the NYU Distinguished Teaching Award, the University's high honor for teaching. He also received an \$8.3 million award from the National Institutes of Health in 2001 to establish the NYU Oral Cancer Research on Adolescent and Adult Health Promotion Center.



Peer Review Board Members Honored at Dean's Luncheon

Dean Bertolami hosted a luncheon on April 18, 2018, to welcome new members of the Peer Review Board on Ethics and Professionalism (PRB), and to thank the entire Board for their service. The members of the PRB are responsible for ensuring compliance with the NYU Dentistry Code of Ethics and Professional Conduct.



From left: Mr. Andrew Chang, '21; Mr. Mihai Urichianu, '18; Mr. Joseph Geiger, '19; Mr. William Pepe, '19; Ms. Kelly Mastrovito, '19; Ms. Sijia Xu, '21; Ms. Ilona Nockles, '18; and Mr. Christopher Peppel, '18. Not shown: Ms. Laya Bahrani, '20; and Ms. Sarah M Hanna, '20.

Dean's Boardwalk Barbeque

The annual spring event brought together hundreds of students, faculty, administrators, and staff for food, games, and fun at the popular Riverpark Restaurant on the East River.



Nigerian Officials Thank NYU Dentistry for Donation of Dental Chairs

On June 25, 2018, a delegation of leaders from Nigeria visited the College of Dentistry to say "thank you" for 25 dental chairs donated by the College to teaching hospitals in Nigeria to enable expanded access to dental care in underserved areas of the country. The donation was facilitated by Dr. Esther O. Kuyinu, clinical associate professor and co-director of clinical removable prosthodontics in the Department of Prosthodontics, who has been a longtime sponsor of dental chair donations to various Nigerian health-care initiatives.



From left: Joy Adedeji, senior vice president and chair of New Africa Broadcasting Network (NABNTV) Charity Initiative; Michael Adeniyi, former president, Organization for the Advancement of Nigerians (OAN), and board member, NABNTV; Moses Adedeji, president and founder of NABNTV; Susan Abraham; Michael O'Connor, EdD, MPA; Esther Kuyinu, DDS; Jessica Hilburg, DDS (all from NYU Dentistry); and Oluyemi Badero, MD, clinical assistant professor of medicine, SUNY Medical School, and chair, board of directors, NABNTV.



NYU Dentistry Salutes Our Own Dr. Chad Gehani, ADA's New President-Elect

Dr. Chad P. Gehani, adjunct clinical associate professor in the Dr. I.N. and Sally Quattararo Department of Endodontics, is the new president-elect of the American Dental Association (ADA). Dr. Gehani was elected during a meeting of the ADA House of Delegates at the 2018 annual meeting of the ADA in Honolulu. He will assume the role of president of the ADA in September 2019, when he will lead the 161,000-member organization.

Since 2014, Dr. Gehani has served as the Second District trustee to the ADA Board of Trustees, and was a delegate in the House of Delegates

from 2000 to 2014. He previously served as president of the New York State Dental Association and the Queens County Dental Society.

Over the course of his career, Dr. Gehani has earned a number of fellowships from prominent organizations, including the International College of Dentists, American College of Dentists, and the Pierre Fauchard Academy. In addition to the ADA, he is a member of the American Association of Endodontists and the Indian Dental Association (USA). He is a recipient of the Ellis Island Medal of Honor, which recognizes Americans who dedicate their lives to the community and is bestowed

by the Ellis Island Honor Society, and the Distinguished Service Award from the Pierre Fauchard Academy, New York Section.

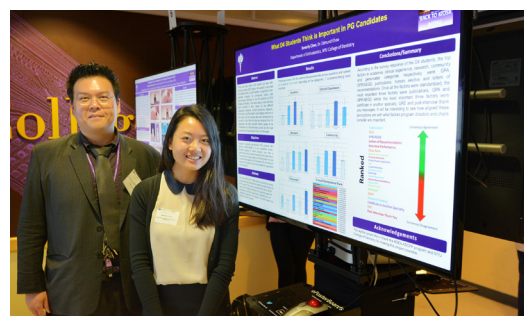
"For more than 35 years, Chad Gehani has been a distinguished member of the College of Dentistry faculty, where he has earned accolades as a wonderful teacher, scholar, and colleague," said Dean Bertolami. "With his election as ADA president-elect he has brought further professional distinction to himself and great honor to the College. Everyone at the College congratulates him on this impressive achievement and wishes him great success as ADA president-elect and president." ■

2018 Research Scholarship Expo Highlights Breadth of Research Conducted by Students and Faculty

The College's 2018 Research Scholarship Expo showcased the work of nearly 200 pre- and postdoctoral dental students, dental hygiene students, international programs students, master's degree students, research scholars, and clinical faculty.

The three-day event, made possible through a partnership between the Office of Research and the NYU Academy of Distinguished Educators, concluded on Friday, April 27, with a keynote lecture, awards ceremony, and reception. Keynote speaker Dr. Yu Zhang, associate professor of biomaterials, discussed his efforts to develop novel ceramic restorative materials and received the Kathleen C. Kinnally Outstanding Scientific Achievement Award.

Thirty-four additional awards were presented by the Office of Research and the Academy of Distinguished Educators, as listed on the following pages.





Dr. Yu Zhang receives the Kathleen C. Kinnally Outstanding Scientific Achievement Award from Dr. Louis Terracio

OFFICE OF RESEARCH AWARDS

Dean's Award for Outstanding Presentation

MARINA DA ROSA KAIZER

Novel Super-Speed Sintered Zirconia by Microwave Technology

Faculty Advisor: Dr. Yu Zhang, Dept. of Biomaterials

Outstanding Presentation in Postdoctoral Research

MARINA DA ROSA KAIZER

Novel Super-speed Sintered Zirconia by Microwave Technology

Faculty Advisor: Dr. Yu Zhang, Dept. of Biomaterials

Master of Science Research Award

DANIEL ECKSTEIN

Physical and Chemical Characterization of Synthetic Bone Mineral Ink

Faculty Advisor: Dr. Paulo Coelho, Dept. of Biomaterials

SONAJ VARDHAMAN

Oral Wear in Multilayer Zirconia

Faculty Advisor: Dr. Yu Zhang, Dept. of Biomaterials

Best Presentation by a Research Scholar

MIRIAM ECKSTEIN

SOCE as a Potential Key Factor in Sjögren's Syndrome Pathogenesis

Faculty Advisor: Dr. Rodrigo S. Lacruz, Dept. of Basic Science and Craniofacial Biology

Violight Jonathan A. Ship Award for Translational Research

JULIANA GOMEZ, '19

2D and 3D Evaluation of Bone Formation Following GBR in Large Animal Model

Faculty Advisor: Dr. Paulo Coelho, Dept. of Biomaterials

The Racquel Z. LeGeros Research Award in Biomaterial Research

NIKAN SHARIF-ZAHEH, '20

Structural Durability of Resin-based CAD/CAM Materials

Faculty Advisor: Dr. Yu Zhang, Dept. of Biomaterials

The Dr. Joan A. Phelan Oral Medicine Award

JOHN BISHARA, '19

IL-17A Induces Hyperalgesia Via NF-KB Signaling Pathway in Trigeminal Ganglion

Faculty Advisor: Dr. Seichi Yamano, Dept. of Prosthodontics

Dr. Michael C. Alfano OKU Research Award

EMILIE GRODMAN, '21

Effects of Probiotics on Type 2 Diabetes MKR Mice Gut Microbiome

Faculty Advisor: Dr. Deepak Saxena, Dept. of Basic Science and Craniofacial Biology

The NYU College of Dentistry Student Research Group Award for Excellence in Research

JOHNNY GROELING, '20; RONNA ABAEYV, '21

Effects of High Fluoride Exposure on Calcium Homeostasis in LS8 Cells

Faculty Advisor: Dr. Rodrigo S. Lacruz, Dept. of Basic Science and Craniofacial Biology

Best Basic Science Presentation by a Student in the DDS Program

STELLA PARK, '21

Sympathetic Modulation of Oral Cancer Proliferation and Nociception

Faculty Advisor: Dr. Brian L. Schmidt, Dept. of Oral and Maxillofacial Surgery; Bluestone Center for Clinical Research; NYU Oral Cancer Center

Best Basic Science Presentation in the Advanced Education Program – Endodontics

CHRISTOPHER SCHILLER

Predictive Values of Patient's Psychological Status to Determine Post-Surgical Pain

Faculty Advisor: Dr. Jennifer Gibbs, Dr. I.N. & Sally Quartararo Dept. of Endodontics

Best Presentation by a Student in the Advanced Education Program – Pediatric Dentistry

BLAIR CHIZNER

Parental Preference on Full Coverage Restorations of Posterior Primary Teeth

Faculty Advisor: Dr. Courtney Chinn, Dept. of Pediatric Dentistry

Honorable Mention: Best Presentation by a Student in the Advanced Education Program – Pediatric Dentistry

ANDIS ALMASI

Analysis of InsureKidsNow.gov and Dental Provides in New York and California

Faculty Advisor: Dr. Courtney Chinn, Dept. of Pediatric Dentistry

Best Presentation by a Resident in the NYU-Lutheran AEGD Program – NYU College of Dentistry Campus

LUKE HARMS

Conservative Tooth Replacement and Ridge Preservation in the Aesthetic Zone

Faculty Advisor: Dr. Peter Mychajliw, Dept. of Cariology and Comprehensive Care

Best Clinical Science Presentation by a Student in the DDS Program

SUSANNA WANG, '21

Is Pain a Biomarker for Oral Squamous Cell Carcinoma Metastasis?

Faculty Advisor: Dr. Donna G. Albertson, Dept. of Oral and Maxillofacial Surgery

Best Clinical Case Report by a Student in the DDS Program

ALYSSA DIERKES, '18

Diagnosis of Dens Evaginatus Tubercle as Adjacent Sinus Tract Source by CBCT

Faculty Advisor: Dr. Lucretia DePaola-Cefola, Dept. of Cariology and Comprehensive Care

Best Educational Scholarship Presentation by a Student in the DDS Program

SARAH LANGER, '21

Evaluation of Student Doctor Compliance with Caries Risk Assessment

Faculty Advisor: Dr. Kenneth L. Allen, Dept. of Cariology and Comprehensive Care

Best Literature Review Presentation by a Student in the DDS Program

KRISTEN ROGERS, '19

Curcumins Therapeutic Role in Regulating Alveolar Bone Loss

Faculty Advisor: Dr. Veena Nanda, Ashman Dept. of Periodontology and Implant Dentistry

Best Presentation by a Dental Hygiene Team

ANNE JAYNE, BETTY HIGH, AND
ESTEPHANIE PARACHE

The Areca Nut and Oral Cancer

Faculty Advisor: Harold Jennings, Dental
Hygiene Programs

AADR Dentsply Sirona SCADA Award

Student will present poster at the AADR Meeting
in Vancouver, Canada (June 2019)

HANNAH JOHNSON, '20

*Load Symmetry on the Failure Modes of MOD
Composite Restorations*

Faculty Advisor: Dr. Yu Zhang, Dept. of
Biomaterials

**Best Presentation in the Programs for
International Dentists – Esthetic Dentistry**

MARIA PEREIRO DE QUEIROZ

Esthetic Restorative Rehabilitation

Faculty Advisor: Dr. Anabella Oquendo Parilli,
Dept. of Cariology and Comprehensive Care

**Best Presentation in the Programs for
International Dentists – Comprehensive Dentistry**

SANA FATIMA

*Gingival Re-contouring by Provisional Implant
Restoration*

Faculty Advisor: Dr. Philip Kotick, Dept. of
Cariology and Comprehensive Care

**Best Presentation in the Programs for
International Dentists – Endodontics**

AKIHIRO MITSUYAMA

*Effect of MetalSEAL on Root Fracture Resis-
tance: A Systematic Review/Meta-analysis*

Faculty Advisor: Dr. Katsushi Okazaki, Dr. I.N. &
Sally Quartararo Dept. of Endodontics

**Best Presentation in the Programs for
International Dentists – Oral Surgery**

VALENTINA VELLANI

*Coronectomy in Horizontally Impacted Third
Molars: Treatment Option or Contraindication?*

Faculty Advisors: Dr. Huzefa Talib and
Dr. Thomas G. Wiedemann, Dept. of Oral and
Maxillofacial Surgery

**Honorable Mention: Best Presentation by a
Research Scholar**

CHRISTOPHER LOPEZ

*Dipyridamole Forms Bone as well as rhBMP-2 in
Growing Alveolar Cleft Models*

Faculty Advisor: Dr. Paulo Coelho,
Dept. of Biomaterials

**Honorable Mention: Outstanding Presentation in
Postdoctoral Research**

SANTOSH KUMAR MAHARANA

*Molecular Mechanisms of Hearing Loss in Nager
Syndrome*

Faculty Advisor: Dr. Jean-Pierre N. Saint-Jeannet,
Dept. of Basic Science and Craniofacial Biology

**Honorable Mention: Best Clinical Science
Presentation by a Student in the DDS Program**

MICHELLE MICHELSON, '19

*Epi-crestal and Sub-crestal Implant Placement:
A Randomized, Split-mouth Trial*

Faculty Advisor: Dr. Ismael Khoully, Dept. of Oral
and Maxillofacial Surgery

NICOLE ALBSTEIN, '20

*Comorbidity for Osteonecrosis Unrelated to
Antiresorptive Therapy*

Faculty Advisor: Dr. Kenneth E. Fleisher, Dept.
of Oral and Maxillofacial Surgery

**Honorable Mention: Best Basic Science
Presentation by a Student in the DDS Program**

GENE PARK, '20

*A Bone Histological Study: The Effect of
Macrometer, Micrometer, and Nanometer
Surface Texturing on Osseointegration*

Faculty Advisor: Dr. Paulo Coelho, Dept. of
Biomaterials

DOWON LEE, '20

*Quantitative Analysis of the Periodontal
Pathogens Behavior in Hypersuccinate
Concentrations*

Faculty Advisor: Dr. Deepak Saxena, Dept. of
Basic Science and Craniofacial Biology

**Honorable Mention – Presentation by a Dental
Hygiene Team**

JASLEEN KAUR, GINA FIDALGO, AND

JANNAN FARHAT

A New Outlook on Fluoride Use

Faculty Advisor: Sarah Yoon Kang, Dental
Hygiene Programs

NYU ACADEMY OF DISTINGUISHED EDUCATORS AWARDS**Best Educational Scholarship Poster by Faculty**

WINNIE FURNARI, RDH, MS

DENTAL HYGIENE PROGRAMS

*Integration of Forensic Dentistry/Catastrophe
Preparedness Course Using ABFO Curriculum
Guidelines: A Twelve Year Study*

Best Clinical Case Study Poster by Faculty

TAKANORI SUZUKI, DDS, PhD

ASHMAN DEPT. OF PERIODONTOLOGY &
IMPLANT DENTISTRY

*Nobel Orthodontic Implant Site Development
Using Labial Root Torque: Case Report*

**Honorable Mention: Best Educational
Scholarship Poster by Faculty**

MARJAN MOGHADAM, DDS, MA

DEPT. OF PROSTHODONTICS

*Apical Movement of an Osseointegrated Implant
in the Anterior Maxilla 20 Years After Placement*

RISKY BUSINESS

Austin Le, '20, Coauthors Studies on Adolescent Amphetamine, Opioid, and Heroin Use



Austin Le, '20

In studies conducted by the Center for Drug Use and HIV/HCV Research (CDUHR) at the NYU Meyers College of Nursing, Austin Le, DDS Class of 2020, a coauthor on the studies, and NYU colleagues at the Meyers College of Nursing and NYU Langone Health looked at various forms of drug use and misuse among adolescents and teens 18 and older, including underreporting of amphetamine use, opioid use among electronic (percussive) dance music partygoers, and heroin use among high school seniors, to better understand how to address these high-risk behaviors.

In the first study, “Discordant Reporting of Nonmedical Amphetamine Use Among Adderall-Using High School Seniors in the US,” the research team found that many high school seniors appear to be underreporting their nonmedical use of amphetamines, despite reporting using Adderall without a doctor’s order. This suggests that many young people are unaware that Adderall is an amphetamine. In addition, such conflicting reports mean that prescription stimulant misuse may be underestimated.

Nonmedical use of amphetamine warrants concern because of its high potential for abuse and dependency, as well as potential adverse effects, including cardiovascular events and seizures. In addition, people who take prescription stimulants without

a doctor’s orders are more likely to engage in other drug use and risky behaviors.

In the second study, “Nonmedical Opioid Use Among Electronic Dance Music Party Attendees in New York City,” the researchers surveyed 954 individuals (ages 18–49) about to enter electronic dance music (EDM) parties at nightclubs and dance festivals in New York City throughout the summer of 2017. Attendees were asked about nonmedical use — defined as using in a manner which is not prescribed of 18 different opioids — including OxyContin, Percocet, Vicodin, codeine, fentanyl, and heroin.

The researchers found that almost a quarter (23.9 percent) of EDM party attendees surveyed admitted to using opioids nonmedically in their lifetimes and one out of 10 (9.8 percent) did so in the past year, which is higher than the national prevalence of past-year use of approximately 4 percent of adults 18 and older.

The findings suggest that prevention and harm reduction efforts need to target this increasingly popular activity as efforts continue toward reducing the opioid crisis.

A third study, “Not Just Heroin: Extensive Polysubstance Use Among US High School Seniors Who Currently Use Heroin,” found that addressing heroin use among teens should take into account the probable use of multiple drugs prevalent in this population. ■

CAN CONTROLLING PERIODONTAL DISEASE PREVENT CANCER?

Increased Oral Pathogens and Decreased Bacterial Diversity Predict Precancerous Lesions of Stomach Cancer

A new study led by NYU's College of Dentistry and School of Medicine found that elevated pathogen colonization and a lack of bacterial diversity in the mouth were identified in people with precancerous lesions that could precede stomach cancer.

The findings, published in the *Journal of Periodontics*, provide new evidence that the increase in pathogens associated with periodontal disease could contribute to the development of precancerous lesions of stomach cancer.

"Our study reinforces earlier findings that poor oral health is associated with an increased risk of precancerous lesions of stomach cancer," said Yihong Li, DDS, MPH, DrPH, professor of basic science and craniofacial biology at NYU Dentistry and the study's corresponding author.

The American Cancer Society estimated that 26,370 new cases of stomach or gastric cancer would be diagnosed in 2016, resulting in 10,703 deaths. Accumulating evidence suggests that chronic inflammation caused by oral bacterial infections may contribute to the development and progression of various types of cancer, including stomach cancer.

Although some risk factors — such as *H. pylori* colonization, cigarette smoking, and eating salt and preserved foods — have previously been confirmed to contribute to the development of stomach cancer, many new cases unrelated to these risk factors are diagnosed each year. Scientists have hypothesized that a

group of pathogens may be responsible for causing periodontal disease and the resulting chronic systemic inflammation that may contribute to the development of gastric cancer.



Yihong Li, DDS, MPH, DrPH

This study assesses the association between periodontal pathogen colonization and the potential risk of developing precancerous lesions — including chronic atrophic gastritis, intestinal metaplasia, and dysplasia — that may predict stomach cancer.

The researchers studied 105 individuals scheduled to receive an upper endoscopy. After the endoscopic procedure and histopathologic evaluation, 35 people were diagnosed with precancerous lesions of gastric cancer and another 70 people of the same ages without precancerous lesions were included in the study as a control group.

The researchers performed full-mouth examinations to assess participants' periodontal conditions. Saliva and dental plaque samples were collected to evaluate colonization by several of the pathogens — *P. gingivalis*, *T. denticola*, *T. forsythia*, and *A. actinomycetemcomitans* — and to characterize oral microbial diversity.

Compared with the control group, patients with precancerous lesions experienced higher prevalence of bleeding when probed (31.5 percent versus 22.4 percent), higher levels of two pathogens (*T. denticola* and *A. actinomycetemcomitans*), and less bacterial diversity in their saliva.

A further analysis, which took into account sociodemographic factors, oral health behaviors, and periodontal assessments, revealed additional predictors of precancerous lesions: elevated colonization of three pathogens (*T. forsythia*, *T. denticola*, and *A. actinomycetemcomitans*), decreased bacterial diversity in dental plaque, and not flossing regularly.

The researchers concluded that the colonization of periodontal pathogens and the altered bacterial diversity in the oral cavity are important factors that, when at higher or lower levels respectively, may contribute to an increased risk of developing precancerous gastric lesions.

"Based on our findings, treatment for chronic periodontal disease and control of periodontal pathogen infections should be included in future strategies for preventing stomach cancer," said Dr. Li. ■

PREVENTING BONE LOSS

Study Finds Evidence That a Protein, MCP-1, May Determine Bone Loss Responses to Parathyroid Hormone



Nicola C. Partridge, PhD

In a study published in *Scientific Reports*, Nicola C. Partridge, PhD, professor in the Department of Basic Science and Craniofacial Biology, and her team investigating the catabolic effect (in which molecules are broken down) of parathyroid hormone (PTH) in hyperparathyroidism (HPT) showed, for the first time, that monocyte chemoattractant protein-1 (MCP-1) is required for catabolic responses to PTH. HPT is a condition in which an abnormally high concentration of PTH in the blood accelerates bone loss.

The research team had previously found that MCP-1 is important in producing an anabolic effect of PTH, in which molecules are combined or synthesized, and they wanted to know if it was also important in causing a catabolic effect.

In the present study, the researchers focused on the role of MCP-1 in PTH-induced osteoclast formation. Increased osteoclast formation causes bones to become thinner and weaker. The researchers recreated the hyperparathyroid state in mice by constantly elevating their hyperparathyroid levels. Over a two-week period, they continuously infused female wild-type and MCP-1

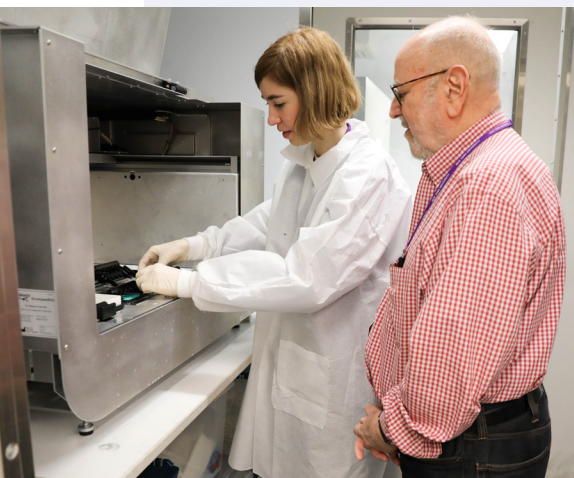
knockout mice (mice whose DNA has been genetically engineered so that it does not express particular proteins) with human PTH. They showed that the ability of PTH to increase osteoclast formation *in vitro* is markedly impaired in cells from MCP-1 knockout mice and concluded that MCP-1 is an important chemokine, or signaling protein, in PTH-induced osteoclast formation and bone resorption.

The findings support the possibility that MCP-1 could be a marker for how PTH works in humans with hyperparathyroidism, as elevated serum MCP-1 has been shown to be correlated with elevated serum PTH levels in women. Notably, within minutes after humans undergo parathyroid adenoma surgery, MCP-1 serum levels decrease.

Because high serum levels of MCP-1 cause the white cells and osteoblasts (bone forming cells) to be stimulated, this process could have systemic effects as well as effects on bone. “MCP-1 is a chemokine, which induces cells to move along a gradient to recruit white cells and osteoblasts to other tissues,” says Dr. Partridge. “Accordingly, there could also be effects on adipose tissue, the heart, and inflammatory conditions.” ■

Researchers Take Two-pronged Approach to Testing for Zika

Daniel Malamud, PhD, professor of basic science and craniofacial biology, and his team, in collaboration with Rheonix, Inc., are developing a novel test for Zika virus that uses saliva to identify diagnostic markers of the virus in a fraction of the time of current commercial tests.



Maite Sabalza, PhD, and Daniel Malamud, PhD

The test, which was adapted from an existing model developed by NYU and Rheonix for rapid HIV testing, is described in two new publications appearing in *PLOS ONE* and the *Journal of Visualized Experiments (JoVE)*.

How Zika is Tested

“The recent Zika virus outbreak confirms that we need an effective surveillance and diagnostic program to reduce the impact of future emerging infectious diseases,” said Maite Sabalza, PhD, a postdoctoral associate in the Department of Basic Science and Craniofacial Biology and the lead author of the studies in *PLOS ONE* and *JoVE*.

Blood samples are most often used to test for Zika virus and are typically processed using a common diagnostic

technique called reverse transcription-polymerase chain reaction (RT-PCR). But blood may not be the best fluid: While the virus disappears in the blood a week or two after a person is infected, it can persist longer in saliva, semen, and urine. In addition, antibodies can remain for months or years in those bodily fluids, which is why it is essential for diagnosis to also detect antibodies after infection.

Backed by funding from the National Institutes of Health, Dr. Malamud and his team are developing a rapid Zika test that combines both nucleic acid and antibody assays using saliva, given that Zika virus and antibodies persist in saliva. A saliva test is also noninvasive, cost effective, and easier to collect than blood or urine.

Faster Results

The new test also has the potential to produce results in a matter of minutes instead of hours or days. Current RT-PCR tests take around three hours and specific antibody tests can take several weeks. NYU researchers are using a different method called isothermal amplification, which can detect a virus’s nucleic acids in as little as 20 minutes, and antibody tests that can take less than an hour using Zika-specific antigens.

“The sooner you can identify a pathogen, the sooner steps can be taken to treat and isolate people. During an epidemic, you could test people before they get on a plane. The future of going through security at the airport may not be taking off your shoes, but instead spitting into a tube,” said Dr. Malamud.

From HIV to Zika

The research team is building on its earlier collaborative work with Rheonix developing a rapid saliva test for

HIV that can detect both viral RNA and antibodies.

“When we developed the HIV test, we knew we could use the same model for any infectious disease. All we need to know is the nucleic acid sequence and an antigen to identify specific antibodies,” Dr. Malamud said.

In *PLOS ONE*, the researchers describe how they altered this model to use markers that detect Zika nucleic acid sequences instead of those for HIV. They then used a portable isothermal amplification device — which could be used for point-of-care testing — to identify Zika RNA.

After showing that the test could confirm the presence of the virus using both purified Zika RNA and Zika-infected saliva, they adapted the test to the Rheonix CARD® cartridge and workstation, enabling them to estimate the viral load in saliva samples. Knowing the amount of virus present is useful for understanding disease severity and immune responses, particularly among pregnant women and fetuses.

The researchers also identified Zika-specific antigens — which can be used to detect the Zika specific antibodies needed for testing — using a high density peptide microarray they describe in *JoVE*. Because Zika can be easily confused with other viruses such as Dengue and Chikungunya, identifying Zika-specific antigens paves the way for more precise diagnostic testing.

With evidence showing that both the nucleic acid and antibody tests work, the researchers can combine them in the Rheonix CARD® cartridge to process both diagnostic assays automatically and simultaneously. Researchers at NYU and around the world are continuing to validate their findings in further experiments using Zika-infected saliva. ■

Gut Bacteria Determine Speed of Tumor Growth in Pancreatic Cancer

The population of bacteria in the pancreas increases more than a thousand fold in patients with pancreatic cancer and becomes dominated by species that prevent the immune system from attacking tumor cells.

These are the findings of a study conducted in mice and in patients with pancreatic ductal adenocarcinoma (PDA), a form of cancer that is usually fatal within two years. Led by researchers at NYU College of Dentistry, NYU School of Medicine, and its Perlmutter Cancer Center, the study was published online in *Cancer Discovery*, a journal of the American Association for Cancer Research.

Specifically, the study found that removing bacteria from the gut and pancreas by treating mice with antibiotics slowed cancer growth and reprogrammed immune cells to again “take notice” of cancer cells. Oral antibiotics also increased roughly threefold the efficacy of checkpoint inhibitors, a form of immunotherapy that had previously failed in pancreatic cancer clinical trials, to bring about a strong anti-tumor shift in immunity.

Experiments found that in patients with PDA, pathogenic gut bacteria migrate to the pancreas through the pancreatic duct, a tube that normally drains digestive juices from the pancreas into the intestines. Once in the pancreas, this abnormal bacterial mix (microbiome) gives off cellular components that shut down the immune system to promote cancer growth, say the authors.

“Our results have implications for understanding immune-suppression in pancreatic cancer and its reversal in the clinic,” says lead co-author Deepak Saxena, PhD, associate professor in the Department of Basic Science and Craniofacial Biology.

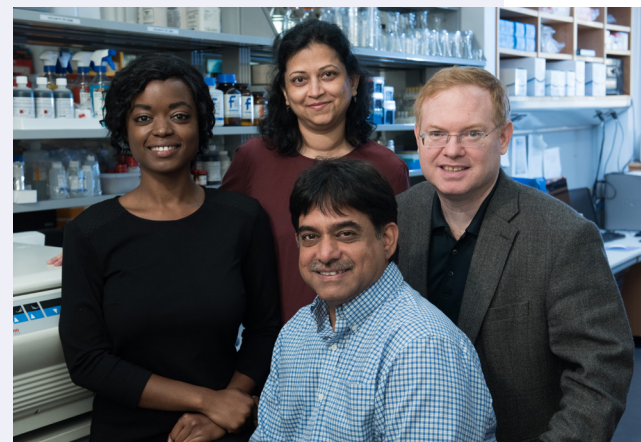
“Studies already underway in our labs seek to confirm the bacterial species with the most potential to shut down the immune reaction to cancer cells, setting the stage for new bacteria-based diagnostic tests, combinations of antibiotics and immunotherapies, and perhaps for probiotics that prevent cancer in high-risk patients.”

On the one hand, the research team theorizes that changes in the genes that cause abnormal cell growth in the pancreas might also change the immune response in ways that favor the growth of different bacterial species than are found in normal individuals. Alternatively, environmental factors like diet, other diseases, or common medications might cause bacterial changes in the gut that are reflected in the pancreatic microbiome.

Whatever the cause, the new study found that bacteria that are more abundant in pancreatic cancers – including groups of species called proteobacteria, actinobacteria, and fusobacteria – release cell membrane components (e.g., lipopolysaccharides) and proteins (e.g., flagellins) that shift macrophages, the key immune cells in the pancreas, into immune suppression.

Experiments showed that eliminating bacteria using antibiotics restored the ability of immune cells to recognize cancer cells, slowed pancreatic tumor growth, and reduced the number of cancer cells present (tumor burden) by 50 percent in study mice.

The researchers found that “bad” bacteria in pancreas tumors trigger immune cell “checkpoints” – sensors on immune cells that turn them off when they receive the right signal.



From left, clockwise: Mautin Hundeyin, MD (NYU School of Medicine); Smruti Pushalkar, PhD (NYU Dentistry); George Miller, MD (NYU Langone Health); Deepak Saxena, PhD (NYU Dentistry)

These checkpoints normally function to prevent the immune system from attacking the body’s own cells, but cancer cells hijack checkpoints to turn off immune responses that would otherwise destroy them. Checkpoint inhibitors are therapeutic antibodies that shut down checkpoint proteins to make tumors “visible” again to the immune system.

The new study confirmed that, similar to what has been observed in patients with pancreatic cancer, checkpoint inhibition alone did not protect mice. This may be because, in the immunosuppressive environment of the tumor, there are too few immune cells around to be activated, say the authors.

As a next step, the research team plans to soon begin recruiting patients into a clinical trial at Perlmutter Cancer Center to test whether a combination of antibiotics (ciprofloxacin and metronidazole) can improve the effectiveness of a checkpoint inhibitor (an anti-programmed death receptor 1 (PD-1) antibody) in PDA patients. ■

A STRATEGY FOR SUCCESS

Study Identifies Effective School-based Cavity Prevention Program

A new study by NYU dental researchers, published in the journal *BMC Oral Health*, suggests that cavity prevention programs with a combination of prevention strategies may be more effective than one alone for reducing tooth decay.

Dental cavities are the world's most prevalent childhood disease, affecting nearly 30 percent of school-age children and 50 percent of rural, minority, or Medicaid-receiving children in the United States.

School-based cavity prevention programs have emerged as an important way to improve access to dental services. In medically underserved areas, these programs often serve as the sole source of dental care for children. While the American Dental Association supports the use of school-based cavity prevention programs, questions remain about the optimal mix of treatment services, intensity, and frequency of care.

"Given the high variability in school-based programs to prevent cavities, comparing the effectiveness of different prevention agents, frequency of care, or intensity of treatment can lead to optimal program design," said Ryan Richard Ruff, MPH, PhD, assistant professor of Epidemiology & Health Promotion and the study's lead author.

The researchers compared two cavity prevention programs in elementary schools serving more than 8,200 students over 10 years (2004-2014). Both programs provided school-based care twice a year to children ages 5 to 12.



Ryan Richard Ruff, MPH, PhD, and Richard Niederman, DMD

One program provided sealants on molars (primary prevention) while the other provided sealants on all teeth and interim therapeutic restorations (primary and secondary prevention). Interim therapeutic restorations are a minimally-invasive method for controlling tooth decay by filling a cavity with a fluoride-releasing agent. Interim therapeutic restorations are intended to bridge the gap between identifying a cavity, particularly in a nontraditional setting or in a very young child, and having the cavity filled or crowned in a more permanent procedure.

Both school-based cavity prevention programs reduced the risk of

untreated decay over time. While the total number of all decayed or filled teeth observed over the course of the study increased across both programs, the comprehensive program that provided primary and secondary prevention significantly lowered the rate of new and untreated cavities when compared to only sealants on molars.

"A comprehensive cavity prevention program, particularly for children without regular access to dental care, can be significantly better than the traditional molar sealant programs," said Richard Niederman, DMD, professor and chair of the Department Epidemiology & Health Promotion and the study's coauthor. ■

International Team of Scientists Shed Light on Parkinson's Disease Biology

Parkinson's disease is a devastating neurodegenerative disease in which nerve cells in the brain gradually die. For years, researchers have known that Parkinson's disease is associated with a build-up of alpha-synuclein protein inside brain cells.

Alpha-synuclein has a normal function, but when it starts to misfold and clump together, it causes nerve cells to die. How these alpha-synuclein protein clumps cause nerve cells to die has been a mystery.

A new study published in *Nature Communications* is making the biology of Parkinson's disease less of a mystery. The study answers several important questions: Which are the toxic species of the protein alpha-synuclein and what is the structure that makes it toxic; and how a misfolded protein might lead to cell death.

Using a combination of detailed cellular and molecular approaches to compare healthy and clumped forms of alpha-synuclein, an international, interdisciplinary team of scientists deciphered how the protein clumps are toxic to nerve cells. Led by researchers at the UK's Francis Crick Institute and the University College London, the study also involved collaborators from NYU College of Dentistry, University of Cambridge, University of Edinburgh, and others in Qatar, Russia, and Uzbekistan.

The researchers made different forms of alpha-synuclein and used single molecule biophysical methods to characterize their structure. They then tested the effects of these different aggregates of alpha-synuclein on

whole cells and on isolated mitochondria, the energy powerhouses of cells.

Using a combination of single cell imaging, mitochondrial electrophysiology, and super-resolution microscopy, the researchers showed how the clumps of alpha-synuclein moved to the mitochondria in cells and came very close to the protein that



Evgeny Pavlov, PhD

generates the energy in the cell, ATP synthase. When these two proteins interact, the abnormal aggregates induce damage to the membranes and proteins in the mitochondria. This leads to a major event in the mitochondria in which a megachannel opens up, causing the mitochondria to swell and burst, and releasing chemicals that tell the cell to die.

The researchers then demonstrat-

ed that this mechanism was relevant in humans. Utilizing stem cell biology advances, the researchers took skin cells from patients with a form of early-onset Parkinson's disease caused by mutations in the gene alpha-synuclein. They turned the skin cells into stem cells, which were then chemically guided into becoming neurons — human brain cells derived from patients themselves that could be studied. This cutting-edge technique provides a valuable insight into the earliest stages of neurodegeneration — something that brain scans and post-mortem analysis cannot capture.

In these human brain cells, the researchers were also able to confirm that the alpha-synuclein formed aggregates that went to mitochondria and opened the gateway to death through the same megachannel opening.

The researchers note that their findings add to our growing understanding of the causes of Parkinson's and other neurodegenerative diseases and could influence drug design in the future.

"Our findings can help the pharmaceutical industry to recognize which is the 'toxic' form of the alpha-synuclein protein to target. This is particularly important because many therapies are being developed against alpha-synuclein," said Evgeny Pavlov, PhD, assistant professor of basic science and craniofacial biology, and a coauthor on the study. "It also highlights the importance of treating patients with these therapies at the time that they will be forming the toxic aggregates in their brain." ■

OUR SENSITIVE SKIN

Bluestone Center Researchers Discover That Skin Color Affects Sensitivity to Heat and Mechanical Stimuli

Researchers at the Bluestone Center for Clinical Research have identified a novel molecular mechanism which explains why dark-skinned and light-skinned people respond differently to heat and mechanical stimulation.

In a study published in *Scientific Reports*, the investigators demonstrate that dopamine, a small molecule produced by skin melanocytes (cells that determine skin color), contributes to differences in the skin's responsiveness to heat and mechanical stimuli. The study was led by Brian L. Schmidt, DDS, MD, PhD, director of the Bluestone Center for Clinical Research and of the NYU Oral Cancer Center.

Dr. Schmidt explained that Dr. Kentaro Ono, a visiting research scientist in his laboratory and the lead author, used publically available data to compare mechanical and heat pain sensitivity in groups of people who differed in their skin color. The team sought out additional publically available data, looking at pigmented and unpigmented rodents based on fur color, and were encouraged by their findings.

The group's meta-analysis in rodents, and comparison of genomic differences between mouse strains, pointed to a gene called *Tyr*, which controls pigmentation and dopamine synthesis in the skin. They manipulated dopamine levels in the skin and found that dopamine causes increased expression of TRPV1 and decreased expression of Piezo2, two proteins that are responsible for heat and mechanical sensitivity, respectively.



Brian L. Schmidt, DDS, MD, PhD (far right), with members of the Bluestone Center team

Study coauthor Yi Ye, PhD, associate director of clinical research operations at the Bluestone Center and assistant professor of oral and maxillofacial surgery, said: "Our skin is a sensory organ that gives us information about our environment, such as temperature and pressure. Excessive heat or pressure produces a pain signal that warns us about the dangerous input. Our environmental condition can change our skin's sensitivity to environmental stimuli under selective pressure."

She added, "Our study shows that people from different ethnic backgrounds sense temperature and pressure differently. For example, sun exposure in people who live close to the equator leads to melanin build-up, which protects them from UV damage, but also makes skin darker. The same skin cell (melano-

cytes) that produces melanin releases dopamine, which will increase skin's sensitivity to heat. This finding potentially means that in order to adapt to extreme weather conditions like those in the equator, this skin cell has developed a protective mechanism that warns people away from excessive sun exposure."

Dr. Schmidt speculates that differential mechanical and heat sensitivity might have implications for the clinical treatment of pain. "We know that individuals report different levels of pain following the same dental procedure or surgery. Similarly, there are differences across groups reporting pain relief once they have taken the same analgesic medication. Potentially, skin pigmentation contributes to these differences and might provide an approach for more targeted and personalized pain treatment." ■

SEEING A WORLD OF POSSIBILITIES IN A GRAIN OF SAND

Study Pinpoints the Role of Proteins That Produce Pearls

Pearls are among nature's most beautiful creations, and have been treasured for countless centuries. Beneath one's iridescent surface lies a tough and resilient structure made of intricately arranged tiles of calcium carbonate organized by a crew of proteins that guide its formation and repair.

While it is known that pearls are made of calcium carbonate with an organic matrix core, the role of the proteins modulating the organization of these crystals has, until recently, been unclear.

Researchers at NYU Dentistry reported the role of two such proteins, the first two-protein study of its kind, that regulate the processes leading up to the formation of pearl. The study was published online in the journal *Biochemistry*, a journal of the American Chemical Society.

A pearl is a byproduct of an oyster's defense mechanism, formed in response to injury to the mantle tissue by an irritant, such as a parasite or grain of sand. Detached cells fall into the inner tissue where they multiply and form an enclosed sac-like structure to seal off the injured remnants. This cavity is then filled with matrix proteins followed by mineral.

The mineral consists of two calcium carbonate components: an inner prismatic layer known as aragonite or the lustrous layer. Both layers are chemically similar to the oyster shell itself.

"In the case of *Pinctada fucata*, a Japanese pearl oyster that creates precious pearls for the pearl industry, the pearl formation process is mediated by a 12-member protein family known as Pinctada Fucata Mantle Gene, or PFMG. PFMG1 and PFMG2 are part of this PFMG proteome that not only forms the pearl, but also acts as 'maintenance crew' participating in the formation and repair of the shell," explained John S. Evans, DMD, PhD, professor of basic science and craniofacial biology and the study's corresponding author.

Little is known about these proteins except that they are expressed in mantle tissue of the oyster. Using the recombinant versions of PFMG1 and PFMG2, the authors used several characterization techniques to study the behavior of proteins and crystals in various conditions that mimic the ocean water.

"What we found is that PFMG1 and PFMG2 combine to form a hydrogel, and within this hydrogel each protein plays a specific role. PFMG2 determines the size of the hydrogel assemblies and regulates the internal structure of the protein films, whereas PFMG1 enhances the stability of tiny ionic clusters that combine to form calcium carbonate layers of pearl," said Gaurav Jain, PhD, a postdoctoral associate in Dr. Evans's lab and the study's lead author.

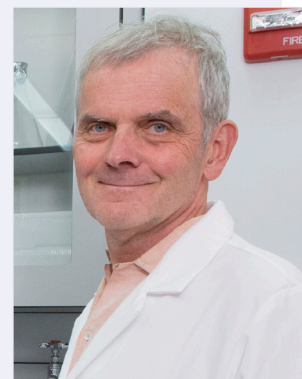
"However, once mineral crystals form, PFMG1 and PFMG2 work together and put the finishing touches to the pearl by synergistically modifying the mineral crystal surfaces and creating internal porosities. The interactions between both proteins is enhanced by calcium ions possibly due to interactions between different domains of PFMG1 and PFMG2," said Martin Pendola, DDS, PhD, also a postdoctoral associate in Dr. Evans's lab and a study co-author.

"Pearl consists of 95 percent calcium carbonate and 5 percent organic matrix. This composition makes pearl approximately 1,000 times tougher than pure calcium carbonate — and one of the most resilient and lightweight materials found in a living organism," said Dr. Jain.

This research not only advances the understanding of underlying molecular mechanisms of pearl formation, but could also aid in the development of fracture resistant materials. These resilient materials could have a variety of applications, including in the manufacturing of improved dental implants, materials for aerospace applications, and energy transmission. ■



Gaurav Jain, PhD



John S. Evans, DMD, PhD



Martin Pendola, DDS, PhD



Dr. Rose J. Amable

has been appointed clinical assistant professor of pediatric dentistry. Dr. Amable holds a DDS degree and an advanced certificate in pediatric dentistry from NYU College of Dentistry. She completed the American Dental Education Association (ADEA)/Academy for Academic Leadership (AAL) Institute for Teaching and Learning (ITL) Program for Dental School Faculty, which prepares participants to become effective teachers.



Dr. Asma Almaidhan

has been appointed a clinical assistant professor in the Department of Orthodontics. She holds a certificate in orthodontics and dentofacial orthopedics from NYU College of Dentistry and is currently in the master's program in oral biology at NYU. She received her dental degree from King Saud University in Saudi Arabia.



Ms. Renee Briggs

has been appointed senior clinic manager in the Ashman Department of Periodontology and Implant Dentistry.



Dr. Teemar Carey

has been appointed a clinical assistant professor in the Department of Pediatric Dentistry. She holds a DMD degree from the University of Pennsylvania and a certificate in pediatric dentistry from the University of Minnesota & Associated Hospitals.



Ms. Yvelande Couamin,

formerly director of occupational health at Brookdale University Hospital, has been appointed senior director of the Health Screening Unit. Ms. Couamin received her BS degree in nursing from SUNY Binghamton and holds an MS in family nursing practice from Long Island University.



Dr. Christine W. Chu

has been appointed a clinical assistant professor in the Department of Prosthodontics. Dr. Chu received her DDS degree from the University of Buffalo School of Dental Medicine and completed a general practice residency at Long Island Jewish Medical Center and a prosthodontics residency at the New York Veterans Affairs Medical Center.



Dr. Jesse Doscher

has been appointed clinical assistant professor in the Departments of Oral and Maxillofacial Surgery and Oral and Maxillofacial Pathology, Radiology, and Medicine. He received his DDS degree from NYU College of Dentistry and completed residencies in oral and maxillofacial surgery at Kings County Hospital Center and Yale-New Haven Hospital, as well as a residency in oral and maxillofacial pathology at Long Island Jewish Medical Center.



Dr. Ozge Erdogan

has been appointed a clinical instructor in the Dr. I.N. & Sally Quatararo Department of Endodontics. Dr. Erdogan holds a DDS degree from Yeditepe University, Turkey. She also completed advanced training in endodontics at the Hacettepe University Faculty of Dentistry in Ankara, Turkey.



Mr. Clyde Kelly Jackson
has been appointed telephone
service center manager.



Mr. Morgan Kaschak
has been appointed director of
scheduling. Prior to joining the
College of Dentistry, Mr. Kaschak
was assistant director of University
Development and Alumni Relations
Information Security. He holds
an MS degree in management of
technology from NYU.



Dr. Lisa Lian
has been appointed a clinical
assistant professor in the
Department of Pediatric Dentistry.
She received a DMD degree
from the Harvard School of
Dental Medicine.



Ms. Rebecca Lukowski-Stone
has been appointed a program
administrator for the Office of
International initiatives.



Dr. AnaMaria Munoz
has been appointed a clinical assistant
professor in the Department of
Orthodontics. She received her DDS
degree from NYU College of
Dentistry, and an MS in dentistry
and a certificate in orthodontics, both
from the Boston University
School of Graduate Dentistry.



Dr. Asma Musaffar
has been appointed a clinical
instructor in the Department of
Cariology and Comprehensive Care.
Dr. Musaffar holds a DDS degree
from UCLA and MPH and MS
degrees in epidemiology, both from
Columbia University.



Mr. Brad Penuel,
formerly associate dean for
special projects and chief of staff to
the president of the Tandon School
of Engineering, has been appointed
associate dean for administration.
Other positions Mr. Penuel has
held at NYU include director of the
Center for Catastrophe Prepared-
ness and Response (CCPR) and
assistant vice president for health.



Ms. Yashira Ramos
has been appointed clinic manager
for the Department of Orthodontics.



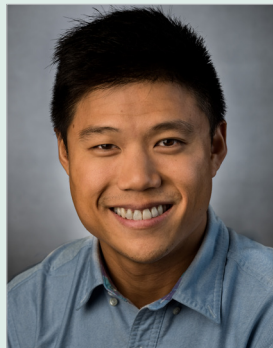
Ms. Julianna Reitz

has been appointed a grants administrator for the Department of Epidemiology and Health Promotion.



Mr. Martin Salcedo

has been appointed clinical supply and procurement manager.



Dr. Alex Sheen

has been appointed a clinical assistant professor in the Department of Pediatric Dentistry. Dr. Sheen holds a DDS degree from Columbia University and a certificate in pediatric dentistry from the Children's Hospital of Pittsburgh of the University of Pittsburgh Medical Center.



Dr. Kamolthip Songtrakul

has been appointed a clinical assistant professor in the Dr. I.N. & Sally Quatararo Department of Endodontics. Dr. Songtrakul received a DDS degree from Mahidol University in Bangkok, Thailand, an MS degree in biology from NYU, and a certificate in endodontics from the NYU Advanced Education Program in Endodontics.



Ms. Marissa Swanson

has been appointed a program administrator for the Office of International Initiatives.



Ms. Dondette Wendler

has been appointed department manager for the Department of Oral & Maxillofacial Surgery.



Dr. Wenbo Yan,

formerly an associate professor in the Department of Natural Sciences at Nyack College and a lecturer in human anatomy and physiology (diagnostic medical sonography) at SUNY Empire State College, has been appointed clinical assistant professor of basic science and craniofacial biology. Dr. Yan holds a PhD degree in animal sciences from Rutgers University and a BS degree in physiology and biophysics from Peking University in Beijing, China.

We Extend a Warm Welcome to Our Newest Adjunct Faculty

Department of Cariology and Comprehensive Care

Dr. Paul S. Apfel, adjunct clinical instructor
Dr. David Asad, adjunct clinical instructor
Dr. Tony Chung, adjunct clinical instructor
Dr. Forouzan Ghaffari, adjunct clinical instructor
Dr. Shweta A. Gandhi, adjunct clinical instructor
Dr. Jillian Kaye, adjunct clinical instructor
Dr. Mandana Kouroshnia, adjunct clinical instructor
Dr. Lawrence Spindel, adjunct clinical instructor
Dr. John Yacoub, adjunct clinical instructor

Dental Hygiene Program

Dr. Ruma Chowdhury, adjunct instructor
Dr. Lisa Duddy, adjunct assistant professor
Ms. Gina Glassberg, adjunct clinical instructor

Dr. I.N. & Sally Quartararo Department of Endodontics

Dr. Wilson Duong, adjunct clinical instructor
Dr. Ali Forghani, adjunct clinical instructor
Dr. Barry Goodman, adjunct clinical instructor
Dr. Timothy Ingraio, adjunct clinical instructor
Dr. Pardis Rajabi, adjunct clinical instructor
Dr. Pierre Wohlgemuth, adjunct instructor

Department of Epidemiology and Health Promotion

Dr. David C. Alexander, adjunct professor
Dr. Reem I. Alhussain, adjunct instructor
Dr. Saskia Estupinan-Day, adjunct professor
Dr. Rashmi Shrestha, adjunct instructor

Department of Oral and Maxillofacial Pathology, Radiology and Medicine

Dr. Michael Katzap, adjunct clinical assistant professor
Dr. Lauren E. Levi, adjunct clinical assistant professor

Department of Oral and Maxillofacial Surgery

Dr. Genevieve Boivin, adjunct clinical assistant professor
Dr. Anthony Bossis, adjunct assistant professor
Dr. Laura E. Edgington-Mitchell, adjunct associate professor

Department of Orthodontics

Dr. Muhammad Abey, adjunct clinical assistant professor

Department of Pediatric Dentistry

Dr. Liora Benichou, adjunct clinical assistant professor
Dr. Christopher Robert Damurjian, adjunct clinical instructor
Dr. Bianca A. Dearing, adjunct clinical assistant professor
Dr. Divya Khera, adjunct clinical assistant professor
Dr. Kristin Memoli, adjunct clinical instructor

Ashman Department of Periodontology and Implant Dentistry

Dr. Andrew Andrawis, adjunct clinical assistant professor
Dr. Alan Pernikoff, adjunct clinical assistant professor
Dr. Christine N. Wong, adjunct clinical assistant professor

Department of Prosthodontics

Dr. Ashley Budasoff, adjunct clinical instructor
Dr. Rikki M. Esterson, adjunct clinical instructor
Dr. Emiliana Kim, adjunct clinical assistant professor
Dr. Kimberly MacGregor, adjunct assistant professor
Dr. Evan Perler, adjunct clinical instructor
Dr. Jason Psillakis, adjunct clinical associate professor
Dr. Guido Sarnachiaro, adjunct clinical assistant professor
Dr. Seungmin Woo, adjunct clinical assistant professor



Dr. Kim Attanasi,
formerly adjunct clinical assistant professor of dental hygiene, has been promoted to adjunct clinical associate professor of dental hygiene.



Dr. Eugene Bass,
clinical assistant professor in the Department of Cariology & Comprehensive Care, has been appointed a group practice director.



Dr. Iryna Branets,
formerly a clinical instructor in the Department of Cariology & Comprehensive Care, has been promoted to clinical assistant professor of cariology and comprehensive care.



Dr. Paulo Coelho,
formerly Leonard I. Linkow Associate Professor of Biomaterials, has been promoted to Leonard I. Linkow Professor of Biomaterials.



Dr. Marie Congiusta,
clinical instructor in the Department of Cariology and Comprehensive Care, has been appointed a group practice director.



Dr. Lucretia DePaola-Cefola,
clinical instructor in the Department of Cariology and Comprehensive Care, has been appointed a group practice director.



Ms. Robin Elliott,
formerly clinic manager for the Department of Oral and Maxillofacial Surgery, has been promoted to assistant director of patient-centered care services.



Dr. Natalia Elson,
formerly a clinical instructor in the Department of Cariology and Comprehensive Care, has been promoted to clinical assistant professor of cariology and comprehensive care.



Dr. Robert S. Glickman,
professor and chair of the Department of Oral and Maxillofacial Surgery, has been appointed associate dean for hospital affairs.



Mr. Thomas E. Gorrell,
formerly adjunct instructor in dental hygiene, has been promoted to adjunct assistant professor of dental hygiene.



Dr. Maged F. Iskaros,
formerly adjunct clinical instructor in
the Department of Cariology &
Comprehensive Care, has been
promoted to clinical instructor of
cariology and comprehensive care.



Ms. Kellie R. Kennedy,
formerly clinical instructor in dental
hygiene, has been promoted to
clinical assistant professor of
dental hygiene.



Dr. Ronald Kosinski,
clinical associate professor of
pediatric dentistry, has been
appointed clinical director of the new
NYU Dentistry Oral Health Center for
People with Disabilities.



Ms. Alyson J. Leffel,
formerly manager of Patient
Advocacy Services, has been
promoted to assistant director of
Patient Advocacy Services.



Dr. Mitchell J. Lipp,
formerly clinical associate professor
of orthodontics, has been promoted
to clinical professor of orthodontics.



Dr. Danny Lo,
adjunct clinical professor of oral
and maxillofacial pathology, radiology
and medicine, has been appointed
assistant director for central sterilization
and implant management.



Dr. Danielle Mitnick,
formerly an adjunct instructor in
the Department of Cariology &
Comprehensive Care, has been
promoted to adjunct assistant
professor of cariology and
comprehensive care.



Ms. Christina Morrow,
formerly associate director of advising
and academic support services, has
been promoted to director of advising
and academic support services.



Ms. Topaz Murray,
formerly a clinic manager, has been
promoted to department manager for
the Department of Epidemiology &
Health Promotion.



Dr. Sara Nichols,
formerly an adjunct instructor in the
Department of Cariology &
Comprehensive Care, has been
promoted to adjunct assistant
professor of cariology and
comprehensive care.



Dr. Kay T. Oen,
formerly a clinical instructor in the Department of Cariology & Comprehensive Care, has been promoted to clinical assistant professor of cariology and comprehensive care.



Yae Seul "Jenny" Park,
formerly a program administrator for the Office of International Initiatives, has been promoted to research administrator for the Office of International Initiatives.



Dr. Staci L. Ripkey,
formerly assistant dean for student affairs and academic support services, has been promoted to associate dean for student affairs and academic support services. Dr. Ripkey has also been promoted from an adjunct instructor in the Depts. of Cariology & Comprehensive Care and Epidemiology & Health Promotion to adjunct assistant professor in both departments.



Dr. Andrea S. Schreiber,
formerly associate dean for graduate and postgraduate programs, has been promoted to senior associate dean for education, responsible for overseeing the College's DDS program, postgraduate dental specialty programs, and master's degree programs.



Dr. Stuart L. Segelnick,
formerly adjunct clinical associate professor of periodontology and implant dentistry, has been promoted to adjunct clinical professor of periodontology and implant dentistry.



Dr. Despina Sitara,
formerly assistant professor of basic science and craniofacial biology, has been promoted to associate professor of basic science and craniofacial biology.



Dr. Leslie F. Smithey,
formerly senior director for quality assurance and patient care, has been promoted to assistant dean for quality assurance and risk management.



Ms. Kaitlin Stier,
formerly an adjunct clinical instructor in dental hygiene, has been appointed a clinical instructor in dental hygiene. She holds an MPH degree from the Massachusetts College of Pharmacy and Health Science (MCPHS) University.



Dr. Denise Trocheset,
formerly associate chair of the
Department of Oral and Maxillofacial
Pathology, Radiology, and Medicine,
has been promoted to chair of
the Department.



Dr. Cheryl M. Westphal Theile,
formerly assistant dean for Allied
Health Programs, has been promoted to
associate dean for Allied Dental Programs.



Dr. Ying Jo Wong,
formerly a clinical instructor in the
Department of Cariology &
Comprehensive Care, has been
promoted to clinical assistant
professor of cariology and
comprehensive care.



Ms. Yuet Ming Yuen-Ologan,
formerly assistant director of
patient-centered care services,
has been promoted to senior director
for central sterilization and
supply management.



Dr. Analia Veitz-Keenan,
formerly clinical associate professor
of oral and maxillofacial pathology,
radiology and medicine, has been
promoted to clinical professor of
oral and maxillofacial pathology,
radiology and medicine.



Dr. Colleen A. Watson,
clinical instructor in the Department of
Cariology & Comprehensive Care, has
been appointed a group
practice director.

Congratulations also to:

Dr. Raphael Bettach,
formerly adjunct clinical assistant
professor of cariology and comprehen-
sive care, has been promoted to adjunct
clinical associate professor of cariology
and comprehensive care.

Dr. Ricardo A. Boyce, Jr.,
formerly adjunct clinical assistant
professor of cariology and comprehen-
sive care, has been promoted to adjunct
clinical associate professor of cariology
and comprehensive care.

Dr. John F. Como,
formerly adjunct clinical instructor in
cariology and comprehensive care,
has been promoted to adjunct clinical
assistant professor of
cariology and comprehensive care.

COMING SOON: The NYU Dentistry Oral Health Center for People with Disabilities

The College of Dentistry has embarked on a major infrastructure project to create a regional center for oral healthcare for people with disabilities, with the goal of improving their overall health and quality of life. The NYU Dentistry Oral Health Center for People with Disabilities will be a state-of-the-art surgical center occupying the entire 8,000-square-foot 8th floor of the Weissman Building. The Center will provide an important alternative — a dental “home” — for a large and vulnerable segment of our population whose only option for oral healthcare, in many cases, is limited to a hospital operating room (routinely after a six-month wait). Construction of the new facility is nearly completed, with an anticipated opening in January 2019.

In New York City, an estimated 950,000 people (of 8.5 million) have some form of disability, and of these 950,000 people, 46% have two or more disabilities. Finding a dentist with the training and willingness to accept a patient with disabilities can be difficult, leaving many disabled patients and their families struggling to obtain effective dental care. Until now.

Within the new facility, the full scope of oral healthcare needs will be met for people with physical, cognitive, acquired, and developmental disabilities. Distinctive features of the Center will enable the provision of care across the lifespan — something that a transient admission to a general hospital could never hope to offer. They include:

- Two fully-equipped sedation suites designed to provide both inhalational and intravenous sedation administered under the supervision of anesthesiologists. This will reduce hospital referrals.
- Spacious treatment rooms
- Consult rooms, which allow for discussion with an inter-professional healthcare team
- A multisensory room designed to reduce patients’ agitation and anxiety, help them relax, and engage their senses
- A nurse’s station
- Two recovery rooms
- A family reception area

The Center’s oral healthcare team includes a dental director, a nurse, a social worker, two patient service representatives, a clinic manager, and a patient care coordinator.

“The new Center will build upon the College’s already existing Special Patient Care Program, which has been very successful and provides a model for expansion,” said Dean Bertolami. “In addition to breaking down barriers to oral healthcare for people with disabilities, we see a great benefit in our ability to provide expanded education in the treatment of disabilities for our students, who will be able to enter practice with the competence and confidence to provide comprehensive, quality dental care for these individuals.”





BE A PART OF OUR FUTURE

The following naming opportunities are available within the NYU Dentistry Oral Health Center for People with Disabilities:

- Oral Health Center (includes exterior signage)
- 270sf Sedation Suite (two available)
- 120sf Operatory (nine available)
- Clinic Director (endowed position)
- Patient Reception Area (two areas — General & Pediatric — available)
- Multisensory room (one available)
- Consult Room (one available)
- Recovery Room (two available)
- Nurse's Station (one available)
- Imaging Suite (one available)
- Faculty/Staff Locker Room (one available)
- Benefactor Signage (Gold, Silver, Bronze)

For information on these naming opportunities, please contact Ryan St. Germain, senior director for development and alumni relations, at ryan.stgermain@nyu.edu; or 212.998.9883.



Orthodontic Program Alumni Drs. Scott Friedman and Efraim Zak on Why They Support Alma Mater



Dr. Scott Friedman, '79 (left), and Dr. Efraim Zak, '94 (right), partners in an orthodontic practice, spoke recently with Dr. Mark Wolff, former senior associate dean for development, about why they have chosen to give back to the College of Dentistry.

Dr. Wolff: Please tell me about your experiences as graduates of both the DDS program and the Advanced Education Program in Orthodontics.

Dr. Zak: NYU shaped who I am and my philosophy of life as a predoctoral student and especially as a postdoctoral student in orthodontics, which was a very nurturing experience. We both learned how important it is to give back to young people so that they can have the same opportunities that we had.

When Scott and I first saw our names on plaques at the College — the Drs. Scott Friedman and Efraim Zak Atrium and the Drs. Scott Friedman and Efraim Zak Residents Conference Room, in recognition of our gifts to upgrade facilities within the Department of Orthodontics — it gave us not only a feeling of pride but also of being privileged to be able to give something back. NYU Dentistry and NYU Orthodontics were without doubt the most consequential professional experiences in our lives. I know that I was able to build a meaningful professional life as an NYU-trained orthodontist — which I've done now for 23 years — and I made a lot of lifelong friends.

Dr. Friedman: I remember when I was in the orthodontic program, I used to see donor recognition plaques with the names of people — some of whom I knew and some of whom had graduated many years before me — and it just makes you feel part of a tradition and part of a family of people who have gone through the same experience as you. It was nice to see their names on the door as a young student, and it's nice to see my own name on the door now.

Dr. Wolff: Do you feel that being specifically an NYU alum was an asset to your career?

Dr. Zak: Oh, absolutely. There are so many graduates from NYU, so you have friends, comrades, classmates all around you. It's not like going to a school with 10 students, and they've disappeared and you don't know anyone with the same educational level you have achieved. So many people I know went to NYU Dentistry. I've made so many connections just by saying to another dentist that I went to NYU. There's a feeling of going through the trenches together — we all did it — we all made it — we talk about the same instructors we had. When you mention NYU, it opens a lot of doors.

Dr. Wolff: When prospective students hear the NYU name, and the number of students in the school, and the number of graduates, many are concerned about the size, but you look at it — and at the alumni network that's out there — as one of our biggest assets.

Dr. Zak: Absolutely, it's a huge asset. You're not in a little closet where you have limited educational opportunities. You can learn from one another, help one another. It's not about competition, it's about camaraderie. And being at a dental school which gives you access to such a large and diverse patient population is unique. We also have great facilities and a great location. We know that anyone we hire who is a graduate of the NYU Orthodontic program hits the ground running because of where they were trained.

Dr. Wolff: That's wonderful to hear. It's also wonderful that you are interested in supporting other programs, including the new NYU Dentistry

Oral Health Center for People with Disabilities (*see related story on p.54*), in addition to the orthodontic program. Would you care to comment?

Dr. Zak: What could be more rewarding than to support special care at NYU Dentistry? There is no facility in the world and certainly none in New York like the one that NYU is building. It will provide a dental home for people with disabilities. They will not be turned away because people don't have the appropriate facility or the comfort level to be able to take care of them. There are a lot of people out there who need the help, and NYU is really stepping up to the challenge. It's a great cause, an important cause, and one that deserves support.

Dr. Wolff: In addition to providing oral healthcare for people with disabilities, we also look at this as an opportunity to provide future graduates of both the DDS program and the specialty programs with the education and training needed to be able to provide dental care on an ongoing basis for these patients.

Dr. Zak: This is a very large and vulnerable population and NYU is going to be able to make a real difference in their lives and to become a model for other dental schools.

Dr. Wolff: Let's turn to another topic; namely, the high cost of dental education. Since many students are graduating with significant debt, what are your thoughts about pursuing specialty training for new graduates?

Dr. Friedman: The cost has indeed skyrocketed. It is much harder for a person just out of dental school to raise a family, buy a home, and make a living than it was when we grad-

uated. It's probably going to have to be addressed at the federal and state levels to make it easier for people to pursue specialties that require years and years of additional study after dental school.

Dr. Zak: One of the things we're doing is talking with senators in Albany to try to get postgraduate studies covered financially. They want to see the most talented people continue their studies and one of the ways to make this easier is to provide a full tax write-off if students have to pay for postgraduate education. That said, I feel that orthodontics is a very rewarding field, and even with the debt I would still do the same thing. So while we understand what people are saying about the debt issue, if you can come out and be successful, you can pay back your debts.

Dr. Friedman: If you enjoy what you do — if you can say that after 20 to 30 years, you're in the right field. That makes all the difference.

Dr. Wolff: Is there anything that either of you would like to add?

Dr. Zak: I'm a firm believer that if you *can* give back, you *should* give back. I think that it's a great advantage for your postdoctoral program to be considered an elite program. When people ask you where you went to school, you should be proud of your alma mater; you should stand tall; and if you're able to give back, it will make a big difference for the people who will come after you. Obviously, a program like the NYU Orthodontic program can't retain its current stature based solely on annual tuition. You have to try to give back as alumni — through both your time and your money — to ensure that your program remains number one. ■

"SIMPLE" VS. "COMPLEX"

Drs. Niederman and Ruff Awarded \$3.6 Million from NIH for Cavity Prevention Research in Rural New Hampshire



Richard Niederman, DMD



Ryan Richard Ruff, MPH, PhD

The Grant:

\$3.6 million, 5-year National Institute on Minority Health and Health Disparities grant.

Research Goal:

To compare cavity prevention techniques in school-based dental programs.

The Hope:

To reduce oral health disparities through the creation of a cost-effective, evidence-based, and school-based cavity prevention model.

- The study will compare the effectiveness of two cavity-prevention techniques in school-based dental programs — a “simple” treatment of topical silver and fluoride, and a “complex” treatment of traditional sealants and fluoride.
- Through prior work in New Hampshire, New York, Massachusetts, Maine, and Colorado, NYU Dentistry researchers determined that “complex” school-based cavity prevention programs are effective in reducing cavities by two-thirds. Preliminary results suggest that “simple” prevention can be equally effective and is preferred by patients.
- The simpler method takes six minutes to deliver, compared to 20 minutes for the more complex method. All children will receive the same preventive dental care twice each year. The researchers will assess oral health to compare the outcomes of both treatments.
- The researchers expect that both treatments will be similarly effective in reducing untreated cavities. However, for the same time and cost, nearly four times more children can be treated with the simpler prevention. Therefore, if the simpler, less expensive strategy is found to be as effective as the more complex, more expensive method, the findings could support clinical and policy changes.

CAVITIES UNDER ARREST

NYU Dentistry Receives \$2.8 Million as Part of Multi-Center Study to Stop the Progression of Cavities in Children

- The grant to NYU Dentistry and its collaborators has been awarded to test the effectiveness of silver diamine fluoride (SDF) in stopping the progression of cavities in young children.
- SDF was approved in the US in 2014 for the treatment of dental hypersensitivity. It has been used for many years in other countries for cavity control, as the liquid can be brushed on teeth to fight tooth decay. In 2016, the FDA designated SDF a “breakthrough therapy,” a process which is designed to expedite drug development. This study will provide the necessary data for obtaining a cavity arrest drug claim for silver diamine fluoride in the US.
- More than 1,000 children, ages 2-5, enrolled in Head Start programs will be treated over a school year to study the impact of SDF applied twice, six months apart, on cavity progression. Researchers will also measure oral health-related quality of life and treatment satisfaction and acceptability. “Should the trial be successful, the impact would be a change in the standard of care and expanded access to a simple, non-invasive, inexpensive strategy for cavity management,” said Dr. Moursi, the principal investigator for NYU’s portion of the grant.
- In addition to Dr. Moursi, NYU Dentistry investigators include Drs. Yihong Li and Courtney Chinn. Also part of the study are researchers from the University of Michigan, University of Iowa, Indiana University, University of Otago in New Zealand, University of Hong Kong and University of Baltimore.



Amr Moursi, DDS, PhD

The Grant:

\$9.8 million, 4-year NIDCR grant, \$2.8 million of which will come to NYU Dentistry.

Research Goal:

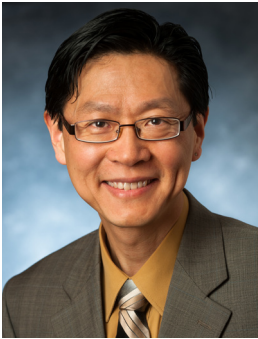
To provide the necessary data for obtaining a cavity arrest drug claim for silver diamine fluoride in the US.

The Hope:

To effect a change in the standard of care and expanded access to a simple, non-invasive inexpensive strategy for cavity management, ultimately reducing oral health disparities.

BETTER MATERIALS FOR BEAUTIFUL SMILES

Dr. Yu Zhang Awarded Nearly \$3.7 Million by NIH's National Institute of Dental & Craniofacial Research



Yu Zhang, PhD

The Grants:

Two NIDCR 5-year grants totaling nearly \$3.7 million.

Research Goal:

To develop strong yet natural-looking materials for restorative dentistry.

The Hope:

To bring us closer to a solution of a pervasive clinical problem – chipping, delamination, and fracture of porcelain-veneered prostheses – leading to reduced issues and cost of replacement.

- Dr. Yu Zhang has been awarded two grants that will support research to develop improved materials for restorative dentistry that are both resilient and aesthetically pleasing.
- One grant will focus on the development of zirconia-based ceramics that are both strong and translucent. The research aims to extend clinical indications for zirconia to the esthetic realm and has applications for minimally invasive treatments. Improved zirconia-based materials can preserve tooth structure and prolong the lifetime of dental prostheses and crowns, thus reducing money and time spent.
- The second grant will focus on improving the fracture resistance of porcelain-veneered dental prostheses. Porcelain-veneered zirconia has a high chipping and fracture rate due to residual stresses from the veneering process. By reducing tensile stresses and designing continuously graded veneer/core interfaces, the team aims to advance understanding of how stress profiles in all-ceramic prostheses can be tailored for better fracture resistance.

PROTECTING BONE, PREVENTING FRACTURES

Drs. Xin Li and Deepak Saxena Receive \$2.2 Million to Study Periodontal Disease and Bone Loss in People with Diabetes

- This study explores the biological mechanisms that contribute to poor oral health and related bone loss among people with diabetes. Type II diabetics are prone to developing periodontitis, which often leads to bone resorption, or the breakdown of bone tissue, by osteoclasts. Diabetes may accelerate periodontitis through metabolic dysregulation, shifts in bacterial colonization, inflammation, and bone loss.
- Drs. Li and Saxena have found that succinate, an important metabolite, is significantly elevated by high blood sugar and in type II diabetics. Succinate also activates the succinate receptor to stimulate development of osteoclasts and bone resorption. They hypothesize that targeting succinate signaling will prevent acceleration of periodontal disease.
- The research team will test this hypothesis and reveal the underlying mechanisms of succinate actions from multiple perspectives. They will investigate whether succinate signaling alters the oral microbiome, study the role of succinate as an inflammatory and immune mediator, and determine whether blocking succinate signaling can thwart diabetes-related periodontal bone loss.



Xin Li, PhD



Deepak Saxena, PhD

The Grant:

\$2.2 million, 5-year NIDCR grant.

Research Goal:

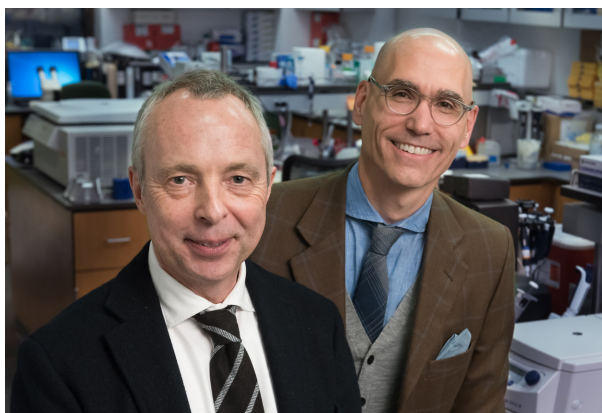
To determine whether blocking succinate signaling can thwart diabetes-related periodontal bone loss.

The Hope:

To prevent periodontal bone loss in those with diabetes.

IMPROVING LIVES FOR ORAL CANCER PATIENTS

NYU's Dr. Brian Schmidt and Columbia's Dr. Nigel Bunnett Awarded NIH Grant to Investigate Proteases and Pain Signaling Related to Oral Cancer



Nigel Bunnett, PhD, and Brian L. Schmidt, DDS, MD, PhD

- Oral cancer is notoriously painful, and the pain signaling mechanisms responsible for cancer pain are not well understood. Drs. Schmidt and Bunnett seek to identify the proteases – or enzymes that catalyze the breakdown of proteins – and signaling pathways that initiate and sustain oral cancer pain.
- Dr. Bunnett is an internationally recognized expert on G protein-coupled receptors (GPCR); over many years he investigated how proteases and a specific GPCR termed PAR₂ (protease-activated receptor 2), mediate neurogenic inflammation and pain. Dr. Schmidt describes Dr. Bunnett's research on PAR₂ as profoundly informative for his work on the molecular mechanisms responsible for oral cancer pain. "Dr. Bunnett's work on GPCR signaling has challenged dogma within the field and refined our understanding of how proteases signal on the cell surface and within intracellular compartments," states Dr. Schmidt.
- Dr. Schmidt will utilize pain severity data gathered from his patients along with oral cancer tissue obtained during surgical resection. "My laboratory will study patient tissues to reveal the cellular origin of the proteases," says Dr. Schmidt. Dr. Bunnett will use high-resolution imaging and molecular probes on patient tumors to track the GPCR intracellularly after cell surface activation. "This work has obvious implications for treating patients," says Dr. Schmidt, "and may lay the foundation for development of a new class of drugs to treat cancer pain and chronic pain without opioids."

The Grant:

\$3.7 million,
5-year NIDCR grant.

Research Goal:

To delineate the mechanism by which proteases associated with oral cancer initiate pain signaling through cell surface receptors and subsequently through endosomal signaling.

The Hope:

To lay the foundation for development of a new class of drugs to treat cancer pain and chronic pain without opioids.

SEEKING NON-ADDICTIVE PAIN OPTIONS

Department of Defense Grant Awarded to Dr. Brian Schmidt and Columbia's Dr. Nigel Bunnett to Investigate Drugs that Inhibit Receptors in Pain-Sensing Nerves

- Chronic pain management is an immense problem, with one in five people suffering from chronic pain during their lifetime. This type of pain is a major cause of human suffering because opioids and other classes of medications are ineffective over time, requiring larger doses as opioid tolerance develops. They also generate debilitating side effects. The opioid epidemic highlights some of the problems associated with these drugs.
- Pain-sensing nerve cells are covered with receptors that react to painful stimuli. These receptors can detect many substances that are produced by injured tissues and some types of cancer. Drs. Schmidt and Bunnett will investigate receptors on and within nerve cells.
- "Our nerve receptor research has potentially groundbreaking clinical applications," says Dr. Schmidt. "This work could define a new class of drugs for chronic pain treatment – non-addictive drugs that produce fewer deleterious side effects."
- The research also has important implications beyond the treatment of pain. Hundreds of members of this receptor family are found on all cells; a third of all clinically-used drugs act on these receptors. The knowledge derived from this work might be useful for modification of existing drugs used to treat a wide variety of diseases including heart disease and cancer.

The Award:

\$2.4 million,
3-year DoD grant.

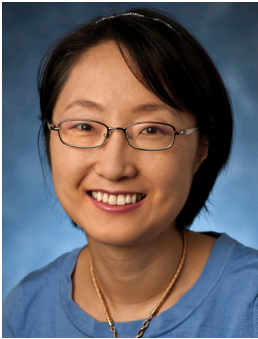
Research Goal:

To determine how receptors inside nerve cells generate chronic pain.

The Hope:

To define a new class of drugs for chronic pain treatment — non-addictive drugs that produce fewer deleterious side effects.

Dr. Juhee Jeong Studying Genetics of Birth Defects with \$1.9 Million NIDCR Grant



Juhee Jeong, PhD

The Grant:

\$1.9 million,
5-year NIDCR grant.

Research Goal:

To obtain a comprehensive understanding of the molecular genetic regulation of calvarial development.

The Hope:

To develop new methods for diagnosis, treatment, and prevention of the birth defects affecting the calvaria.

- The study focuses on abnormalities in the calvaria, the upper part of the skull, at birth. The calvaria comprise plates of bone and fibrous joints, and the balance between the two components is crucial.
- Craniosynostosis, a premature fusion of bones in the skull, occurs in one of every 2,000 births and leads to a dysmorphic skull that can affect brain and orofacial development. Current treatment of craniosynostosis often involves invasive and risky surgeries at young ages.
- The goal of the research is to obtain a comprehensive understanding of the molecular genetic regulation of calvarial development, which hopefully will lead to innovative strategies to treat and prevent related birth defects. The researchers will focus on LMX1B, a human birth defect gene that they hypothesize is a key factor that inhibits the formation of bone.
- The outcome of the research will provide crucial insights into the regulation of early stages of calvarial development and identify novel mechanisms and players that can contribute to the pathogenesis of craniosynostosis. The knowledge gained can help devise new methods for diagnosis, treatment, and prevention of the birth defects affecting the calvaria.

IMPROVING SKELETAL HEALTH IN OLDER AGE

Dr. Shoshana Yakar Awarded National Institute of Aging Grant to Examine Age-Related Changes in Bone

- Age-induced changes in bone are thought to result from two causes: somatopause, the age-related decline in growth hormone (GH) and insulin-like growth factor-1 (IGF-1), and normal changes in bone cell activity and tissue properties.
- GH and IGF-1 are key endocrine factors regulating body composition (lean and fat mass), acquiring bone mass, and maintaining bone mineral density (BMD) during adulthood and aging. Somatopause has been considered a significant cause for changes in body composition and BMD, as well as increased morbidity and mortality. Strategies to increase GH and IGF-1 in bone tissue during aging are expected to improve bone quality, which would have a profound economic impact by decreasing the healthcare costs of age-related bone disease.
- "Our research links three hallmarks of aging: altered intercellular communication, which is central to tissue integrity; mitochondrial dysfunction, which is central to cell survival; and deregulated nutrient sensing, which is central to cellular metabolism," said Dr. Yakar.
- Findings will provide a global view of how osteocytes respond to somatopause and normal aging, highlight new potential target genes that play roles in response to stress, and provide a roadmap to develop strategies to prevent or delay bone loss during aging.



Shoshana Yakar, PhD

The Grant:

\$2.27 million,
5-year NIA grant

Research Goal:

To shed light on the molecular mechanisms responsible for bone loss in aging.

The Hope:

To develop new approaches to combat age-induced bone loss and bone fragility.

SEEKING A BETTER UNDERSTANDING OF ENAMEL PATHOLOGY

Dr. Rodrigo Lacruz Awarded NIDCR Grant to Study Tooth Enamel Formation



Rodrigo Lacruz, PhD

The Grant:

\$1.4 million,
4-year NIDCR grant.

Research Goal:

To develop a deeper understanding of molecular pathways in tooth enamel development and the functions of mitochondria and redox.

The Hope:

To better understand how dental disease develops.

- Tooth enamel is formed by cells called ameloblasts in two main stages. The thickness of enamel is formed in the first stage and then mineralized in the second stage by increased ion transport.
- “Dysregulation of the processes during either of these two stages leads to dental disease,” said Dr. Lacruz, the study’s principal investigator. “Our research seeks to develop a deeper understanding of molecular pathways in tooth enamel development and the functions of mitochondria and redox, which will help us to better understand how dental disease develops.”
- The NIH-funded study will identify novel molecular pathways in enamel formation by linking calcium (Ca²⁺) homeostasis with mitochondrial function and redox. Oxidation-reduction reactions are any chemical reaction in which molecules gain or lose an electron. Although altered redox has been linked with a number of diseases, such as Alzheimer’s, redox changes also function as important signaling events. Currently, the role/s of mitochondria and redox in signaling and metabolism during enamel formation are largely unknown.
- Preliminary data from Dr. Lacruz’s lab strongly suggest that the vital and interconnected cellular functions of mitochondria and redox modulate enamel mineralization, and therefore are important to understanding enamel pathology.

THE NERVOUS SYSTEM-ORAL CANCER LINK

Dr. Nicole Scheff Receives NIH Grant to Study Interaction of Sensory Nerves and Oral Cancer

- Nicole N. Scheff, PhD, a postdoctoral fellow in the laboratory of Brian L. Schmidt, DDS, MD, PhD, has received a Pathway to Independence Award, a grant that supports exceptional postdoctoral researchers during their transition to independent research careers. She is investigating the reciprocal impact of neuron-cancer communication on oral cancer pain and oral cancer growth.
- Previously, Dr. Scheff’s research with Dr. Schmidt revealed pain-like behavior in a preclinical model of oral cancer. In that model, Dr. Scheff found that neurons adjacent to the tumor responded at a lower stimulation threshold, and that nerves adjacent to a tumor can play a significant role in cancer progression.
- Recent experiments suggest that chemically blocking neuron activity near a tumor could reduce pain and tumor size, as well as increase the quantity of cancer-fighting immune cells.
- Dr. Scheff advocates for additional research directed at the peripheral nervous system and cancer. Medications that selectively block nerve activity near a tumor without affecting the central nervous system would be a major advancement in oral cancer therapy.



Nicole N. Scheff, PhD

The Grant:

\$950,000, 5-year
NIDCR grant

Research Goal:

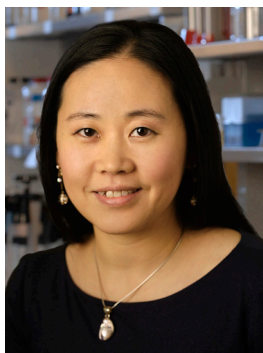
To investigate the reciprocal impact of neuron-cancer communication on oral cancer pain and oral cancer growth.

The Hope:

To spur the development of novel oral cancer therapeutic strategies that target sensory neurons.

SEEKING CELLULAR CLUES TO PREVENT BONE LOSS

Dr. Xin Li Receives NIH Grant to Study Age-Related Bone Loss



Xin Li, PhD

The Award:

\$435,875 National Institute on Aging grant.

Research Goal:

To test the hypothesis that succinate signaling may play a role in age-related bone diseases and targeting succinate receptor activation could diminish age-related bone loss.

The Hope:

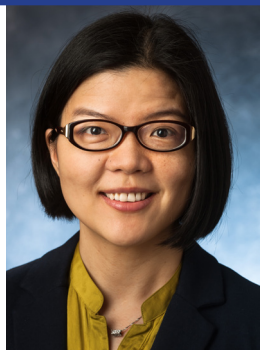
To provide a potential therapeutic target to counteract bone loss in aging.

- Osteoporosis and age-related fractures have become major public health issues in the US, with more than 1.5 million age-related osteoporotic fractures occurring annually. However, the mechanism of how aging-related changes in cellular metabolism lead to compromised bone health is still elusive.
- Dr. Li has been studying succinate, a metabolite that activates the succinate receptor to stimulate the development of osteoclasts (a type of bone cell that breaks down bone tissue) and bone resorption. Her team has found that aging is associated with elevated succinate levels in bone marrow stromal cells.
- The researchers will target succinate receptor activation and signaling using a two-fold approach: rescuing age-related bone loss in animal models and identifying a specific signaling pathway in regulating osteoclasts in aging.
- Understanding succinate signaling will provide a potential therapeutic target to counteract bone loss in aging, which could potentially improve bone health and quality of life in older adults in the future.

ORAL CANCER PAIN'S SCHWANN SONG

Dr. Yi Ye Awarded NIH Grant to Investigate Oral Cancer Pain

- Dr. Ye will investigate the role of Schwann cells in oral cancer pain.
- Cancer pain is currently treated with opioid medications; however, these drugs produce side effects because they broadly affect the central nervous system. In addition, opioids become ineffective with higher tolerance.
- Schwann cells surround, insulate and support nerve axons. Dr. Ye discovered that these cells are activated by oral cancer and revert to a more primitive cell type when adjacent to oral cancer cells.
- Dr. Ye now seeks to determine whether cancer-activated Schwann cells release pain mediators. She hopes to demonstrate a causal relationship between Schwann cell activation and oral cancer pain, and to identify mediators produced by Schwann cells that activate or sensitize neurons.



Yi Ye, PhD

The Award:

\$300,000-plus NIH grant.

Research Goal:

To investigate the link between Schwann cells and oral cancer pain.

The Hope:

To develop a non-opioid approach to combat oral cancer pain at the site of the cancer.

IMPROVING ORAL HEALTH DURING PREGNANCY

Dr. Stefanie Russell Awarded NYS Health Foundation Grant to Improve Oral Health Among Vulnerable Pregnant Women



Stefanie Russell, PhD

The Award:

*\$152,680, 1-year
NYS Health Foundation grant.*

Research Goal:

To address oral health deficiencies among low-income, vulnerable pregnant women.

The Hope:

To improve access for these women to dental screening and service referrals; increase knowledge among patients and providers about the importance of oral care during pregnancy; and facilitate dental care during pregnancy

- Despite detrimental oral changes accompanying pregnancy and the established causal relationship between a mother's and her child's oral health, roughly 60% of women do not see a dentist during pregnancy. In fact, women with the poorest oral health (minority, low-income, receiving Medicaid) are least likely to see a dentist, with approximately two-thirds not seeing a dentist during pregnancy..
- The project will use evidence-based strategies adapted from the 2012 national guidelines, "Oral Health During Pregnancy: A National Consensus Statement"; namely, providing education for providers and patients and integration of oral healthcare into the prenatal care system. It will measure changes in both provider and patient behavior (over a six-month implementation period) resulting from a collaborative health promotion program between NYU College of Dentistry and the Bellevue Obstetrics and Gynecology clinic that addresses multiple barriers to oral health in this population.
- "Our plan is evidence-based and our team has the experience and motivation to successfully complete the project and to disseminate the results to those who wish to use it as a model, wherever low-income pregnant women are failing to obtain dental care," says Dr. Russell.
- Dr. Russell plans to use data from this study to apply for a larger-scale grant that will enable the clinic at Bellevue to achieve long-term financial sustainability.

To learn more about research grants awarded to NYU College of Dentistry faculty and researchers, read the full news stories at nyu.edu/news.



NEW YORK 1 featured a story on the expansion of the *Smiling Faces, Going Places* dental van program to an entire school in Queens.

TODAY.COM featured Dr. Amr Moursi, professor and chair of the Department of Pediatric Dentistry, in a story on the importance of brushing your teeth with fluoride toothpaste.

ADA NEWS featured a study conducted by Dr. Deepak Saxena and Dr. Xin Li, both associate professors of basic science and craniofacial biology, that explored the biological mechanisms that contribute to poor oral health and related bone loss among people with diabetes.

NEWSWEEK quoted Dr. Daniel Malamud, professor of basic science and craniofacial biology, in an article titled "This Super-sensitive HIV Test Could Use Spit to Diagnose People."

NEW YORK 1 ran a story on a new partnership between NYU Dentistry and the New York City Administration for Children's Services that aims to provide NYC foster children with easier access to dental care. (See related story on p. 86.) The story was also reported by **AM NEW YORK**, **THE AMSTERDAM NEWS**, **NEWS 12 BRONX**, **WPIX-TV**, **WNBC-TV** and **ADA NEWS**.

AAS SCIENCE UPDATE interviewed paleoanthropologist Dr. Timothy Bromage, professor of biomaterials, for a story on "The Why of Wisdom Teeth."

CRAIN'S HEALTH PULSE ran a story on research conducted by Dr. Daniel Malamud, professor of



basic science and craniofacial biology, and his team, that aims to develop a rapid diagnostic test for the Zika virus. The story was also featured on Voice of America, and in **R&D MAGAZINE**, **SCIENCE DAILY**, **HOMELAND PREPAREDNESS NEWS**, and on **GENOMWEB**, and was broadcast on more than 25 television stations across the US. **CRAIN'S HEALTH PULSE** also ran a story on the College's plans to build the NYU Dentistry Oral Health Center for People with Disabilities.

THE PHILADELPHIA INQUIRER quoted Dr. Karen G. Raphael, professor of oral and maxillofacial pathology, radiology and medicine, in an article titled "Grind Your Teeth at Night? Botox Might Help." The interview also appeared in **THE CHICAGO TRIBUNE**.

NEW YORK MAGAZINE interviewed Dr. Ross Kerr, clinical professor of oral and maxillofacial radiology, pathology, and medicine for a story on "black hairy tongue."

THE BRONX TIMES ran a story on one of the graduates of the new Dental Assisting Certificate Program.

CNN MONEY interviewed Dr. Olivier Nicolay, clinical associate professor and chair of the Department of Orthodontics, for an article titled "The Hottest Stock of the Year: Invisalign."



DOCTOR RADIO on Sirius XM broadcast its eighth consecutive weeklong series on oral health, "Start Your Summer with a Smile" from June 11-15, 2018. The live, call-in radio program featured a range of topics, including "Oral Health as We Age" with Dr. Rima Bachman Sehl, associate professor of cariology and comprehensive care; "Aesthetic Dentistry Advances" with Dr. Anabella C. Oquendo, clinical assistant professor of cariology and comprehensive care; "Special Needs Dentistry" with John D. Kemp, Esq., president & CEO of The Viscardi Center; "Pediatric Dentistry Update," hosted by Dr. Bill Bongiorno, with Dr. Alexis Cohen, clinical associate professor of pediatric dentistry; and "Dental Implants: Are They Right for You?" with Dr. Vera Tang, clinical assistant professor and vice chair of the Ashman Department of Periodontology and Implant Dentistry. Each show attracted an estimated 250,000 listeners.

DOCTOR RADIO also featured interviews with Dr. Jessica Hilburg, associate dean for clinical affairs, on healthy aging and dental health and on dental emergencies and regular dental care; Dr. Amr Moursi, professor and chair of the Department of Pediatric Dentistry, on Halloween candy and caries prevention; on the challenge of providing oral health care for children in underserved communities; and on nutrition; Dr. Robert S. Glickman, professor and chair of the Department of Oral and Maxillofacial Surgery and associate dean for hospital affairs, on TMJ and on dental implants; Dr. Vera Tang, clinical assistant professor and vice chair of the Ashman Department of Periodontology and Implant Dentistry, on prevention of periodontal disease and on general dentistry and routine dental hygiene; Dr. Ronald Kosinski, clinical associate professor of pediatric dentistry and clinical director of the NYU Dentistry Oral Health Center for People with Disabilities, on children's dental health; and Dr. Marjan Moghadam, clinical assistant professor of prosthodontics, on aesthetic dentistry.

DIABETIC LIVING interviewed Dr. Peter Loomer, clinical professor and chair of the Ashman Department of Periodontology and Implant Dentistry about diabetes and oral health.

THE DENTAL HEALTH SHOW on Sirius XM hosted by Dr. Amr Moursi, professor and chair of the Department of Pediatric Dentistry, debuted on May 7, 2018. The program, which airs biweekly on Mondays at 3 pm Eastern time, features news and advances in dentistry, and brings the latest in research and dental treatment to listeners around the country.

NEWSDAY HEALTHLINK interviewed Dr. Fabiola Milord, clinical instructor in the Department of Cariology and Comprehensive Care, for a story on promoting good dental health via smart food choices.

PRACTICAL DERMATOLOGY featured a study by Dr. Brian Schmidt, director of the Bluestone Center for Clinical Research and of the NYU Oral Cancer Center, and his team, that showed that skin color affects skin sensitivity to heat and mechanical stimuli.

REUTERS featured research by Dr. Yihong Li, professor of basic science and craniofacial biology, that showed that periodontal disease can increase the risk of precancerous lesions associated with stomach cancer. ADA News and Cancer Therapy Advisor also reported on Dr. Li's research.

WOMEN'S HEALTH also ran a story on Dr. Li's research titled "Why Keeping Your Gums Healthy Could Reduce Your Risk of Stomach Cancer: The Benefits of Brushing Go Way Beyond Your Chompers."

Women'sHealth

VOICE OF AMERICA showed the work being done in the laboratory of Dr. Dan Malamud, professor of basic science and craniofacial biology, to develop a novel test for Zika virus that uses saliva to identify diagnostic markers of the virus in a fraction of the time of current commercial tests.

AARP published an interview with Dr. Mark Wolff, former professor and chair of the Department of Cariology and Comprehensive Care, titled "Is Carbonated Water Bad for Your Teeth?" **MEN'S HEALTH** quoted Dr. Wolff in its "Text a Doctor" segment on brushing.

SELF interviewed Dr. Wolff for an article titled "Malin Akerman Swears Oil Pulling Makes Her Teeth Healthier - But Experts Aren't Convinced." Dr. Wolff was also interviewed by Self for articles titled "What to Expect Before, During, and After Wisdom Teeth Removal," "Seven Signs You Need to Listen to Your Mom and Drink More Water," "How to Heal the Roof of Your Mouth After You've Burned It," "Dentists Explain 8 Ways to Make Your Next Appointment a Little Bit Easier," "Five Cavity Symptoms You Shouldn't Ignore," and "Five Reasons Your Teeth Are So Agonizingly Sensitive."

ADA NEWS ran a story on NYU Dentistry receiving a \$13.3 million grant from the Patient-Centered Outcomes Research Institute (PCORI) to study caries prevention and its impact on students' quality of life and school performance.

GENETIC ENGINEERING & BIOTECHNOLOGY NEWS featured a study by Dr. Deepak Saxena, associate professor of basic science and craniofacial biology, in collaboration with researchers at NYU Langone Health, showing that gut microbiome promotes pancreatic cancer progression. ADA News also featured the study.

ADA News

ADA NEWS reported on a new grant to Dr. Brian Schmidt, director of the Bluestone Center for Clinical Research and of the NYU Oral Cancer Center, to study oral cancer pain.

UNIVISION featured Dr. Maria P. Rodriguez Cardenas, clinical assistant professor of cariology and comprehensive care, in a segment on teeth whitening.

DRBISCUSPID.COM interviewed Dr. Ryan R. Ruff, assistant professor in the Department of Epidemiology and Health Promotion, for a story on his study published in the *Journal of Public Health Dentistry* on "Total Observed Caries Experience (TOCE)."

WABC RADIO'S KATZ'S CORNER, a health call-in show, featured an interview with Dr. Schmidt on the importance of early oral cancer detection, diagnosis, and treatment options.

THE BUMP.COM interviewed Dr. Serena Kassam, clinical assistant professor of pediatric dentistry, on how to care for an infant's baby teeth.

PREVENTION MAGAZINE interviewed Dr. Leila Jahangiri, clinical professor and chair of the Department of Prosthodontics, for an article titled "Everyday Health: Teeth-Grinding Solutions."

READER'S DIGEST interviewed Dr. Jahangiri on home remedies for teeth grinding.

SELF interviewed Dr. Robert S. Glickman, professor and chair of the Department of oral and maxillofacial surgery and associate dean for hospital affairs, for an article titled "Five Causes of Jaw Pain That You Need to Know."

SELF

TOM'S GUIDE.COM interviewed Dr. Jessica Hilburg, associate dean for clinical affairs, about features to look for in an electric toothbrush. AARP also interviewed Dr. Hilburg for a story about choosing oral hygiene products.

POPSUGAR FITNESS interviewed Dr. Hilburg on whether or not drinking carbonated water is bad for your teeth.

POLITICO NY interviewed Dr. Amr Moursi, professor and chair of the Department of Pediatric Dentistry for a story titled "Teens Like Vaping."

POLITICONEWYORK

WABI, FOX BANGOR NEWS, AND NEWS CENTER MAINE all ran stories on the April 2018 oral health outreach to Machias, Maine, sponsored by the NYU Dentistry/Henry Schein Cares Global Student Outreach Program.

AEGIS DENTAL NETWORK reported on a \$3.6 million NIH grant for cavity-prevention awarded to Dr. Richard Niederman, professor and chair of the Department of Epidemiology and Health Promotion, and Dr. Ryan Richard Ruff, assistant professor of epidemiology and health promotion.

SELF interviewed Dr. Ross Kerr, clinical professor of oral and maxillofacial pathology, radiology and medicine, for an article titled "Why Trying to Cure Canker Sores with Alum May Not Be Worth It." Dr. Kerr was also interviewed by Self for an article titled "Why Do the Corners of My Mouth Crack—and How Do I Fix It?"

WASHINGTON SQUARE NEWS interviewed Dr. Cheryline Pezzullo, a clinical instructor in the Department of Cariology and Comprehensive Care, for an article titled "NYU Dentistry Outreach Program Connects with Underserved Communities."

WFMJ21.COM carried an article by Dr. Nancy J. Dougherty, clinical associate professor of pediatric dentistry, titled "At What Age Can Kids Start Brushing Their Own Teeth?"

SELF interviewed Dr. Vera Tang, clinical assistant professor and vice chair of the Ashman Department of Periodontology and Implant Dentistry, on whether people really need to see their dentists twice a year and for a story on general dental care and oral hygiene for the tongue titled "Your Tongue is Filthy: Here's How to Clean It."

PREVENTION MAGAZINE interviewed Dr. Tang for an article titled "5 (or More) Reasons Why Your Gums Are Receding."

VICE TONIC interviewed Dr. Tang for an article titled "Is a Dental Deep Cleaning Ever Really Necessary?" Vice Tonic also interviewed Dr. Alex Shalman, adjunct clinical instructor in the Department of Cariology and Comprehensive Care, for a story titled "Is It Gross to Not Brush My Teeth Before Bed?"

SELF interviewed Dr. Mazen Natour, clinical assistant professor of periodontology and implant dentistry, for an article titled "What the Color, Size, Shape, and Feel of Your Gums Say about Your Health."

AEGIS DENTAL NETWORK reported on a \$2.8 million NIH grant awarded to Dr. Amr Moursi, professor and chair of the Department of Pediatric Dentistry, as part of a multi-center study to stop the progression of cavities in children, and on a \$2.2 million grant awarded to Drs. Xin Li and Deepak Saxena, both associate professors of basic science and craniofacial biology, to study periodontal disease and bone loss in people with diabetes.

In Praise of Two Extraordinary University Leaders and Friends

Dr. Robert Berne



Dr. Berne addresses the College's Strategic Planning Plenary Council in 2014.



Dr. Robert Berne, who announced his retirement as NYU's executive vice president for health last June, served for 15 years in that position as a core member of the University's leadership team. An NYU faculty member since 1976, Bob had served in a variety of major University positions prior to becoming executive vice president for health, including senior vice president for health, vice president for academic and health affairs, vice president for academic development, and dean of NYU's Robert F. Wagner Graduate School of Public Service. A noted scholar and expert on public education, he was a founder and co-director of NYU's Institute for Education and Public Policy. His numerous honors and awards include the NYU Distinguished Teaching Award, the University's highest teaching honor.

As executive vice president for health, Bob was responsible for working with deans and other University leaders on long-term academic, financial, and operational strategies for the University's health enterprise. His leadership, guidance, and collaboration enabled the University to make internal changes that have improved the quality, expanded the reach, and enhanced the reputation of NYU's health-related programs in medicine, dentistry, nursing, and public health.

At the College of Dentistry, Bob's impact has been extraordinary. He shepherded us through the process of planning and constructing the new interprofessional building at 433 First Avenue. He played a pivotal role

in helping us to create partnerships across NYU schools, especially with the School of Medicine, the Tandon School of Engineering, and the College of Global Public Health (CGPH). Indeed, it is not too much to say that Bob made the CGPH happen, and the resulting benefits to the College of Dentistry, as well as to the University as a whole, have been significant. They include joint recruitment of faculty,

"A stalwart champion of the College, Bob enabled us to navigate the challenges and opportunities we encountered over the past decade."

— Dean Charles N. Bertolami

secondary dental faculty appointments at CGPH, dental students enrolling in the master's degree program in public health, and Dentistry and CGPH jointly offering a DDS/CPH (certificate in public health) online program. (See related story on p. 74.)

Possibly the single most significant College of Dentistry achievement — which Bob played a pivotal role in bringing about — was also the most unusual: For a decade, the NYU College of Nursing was a component unit

within the College of Dentistry, with the dean of Nursing reporting to the dean of Dentistry. This college-within-a-college approach was a unique opportunity to advance a new level of interprofessional collaboration. The dental school took this responsibility seriously and worked closely with the newly appointed dean of Nursing and with Bob to expand enrollment, hire outstanding faculty, and support the new college financially, if necessary.

In 2016, the dental school strongly endorsed the separation of Nursing into a separate college. The College of Nursing became independent with significant financial reserves, a markedly enlarged faculty, and expanded student enrollment housed within a purposely-built new home at 433 First Avenue, shared with Dentistry and Engineering. None of these successes could have been achieved without Bob's leadership and commitment.

Moreover, the significant number of high profile, world-class faculty recruits to the College in recent years would not have been possible without Bob's strong support for this strategic priority.

"Since my arrival at the College of Dentistry in 2007," said Dean Bertolami, "Bob Berne has offered me many important insights into NYU, as well as his friendship, which I value deeply. A stalwart champion of the College, he enabled us to navigate the challenges and opportunities we encountered over the past decade. I am confident that the legacy of Bob's wisdom, vision, and thoughtful counsel will continue to steer us in the right direction." ■

In Praise of Two Extraordinary University Leaders and Friends

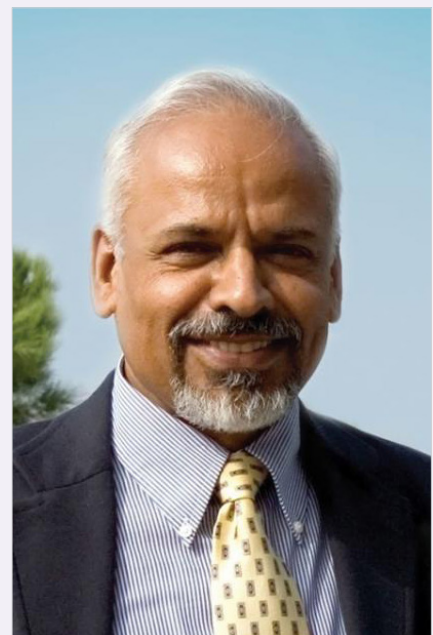
Dr. K. R. Sreenivasan



Dr. Sreenivasan lights up the room at a Professional Development event at the College.



Executive Vice Dean Michael O'Connor with Dr. Sreenivasan and Dean Bertolami



Dr. Katepalli R. Sreenivasan — known to his peers as Sreeni — is the recently retired dean of NYU's Tandon School of Engineering, where he is also the Eugene Kleiner Professor for Innovation in Mechanical Engineering. He has the further distinction of being a University Professor, a title conferred upon scholars whose work is interdisciplinary and reflects exceptional breadth. He also holds professorships in the Department of Physics, the Courant Institute of Mathematical Sciences, and the College of Dentistry's Department of Biomaterials.

A distinguished and inspiring experimental physicist, whose research focuses on the behavior of fluids and turbulence, Sreeni joined NYU in 2009 from the International Centre for Theoretical Physics in Trieste, Italy, where he was director and was concurrently on the faculty of the University of Maryland as Distinguished University Professor, Glenn L. Martin Professor of Engineering, professor of physics, and director of the Institute for Physical Science and Technology. Prior to that, he taught at Yale for more than 20 years. He has been a visiting professor at Caltech, Rockefeller University, Cambridge University, and the Institute for Advanced Study at Princeton.

Early in the planning stages for the new, interprofessional building at 433 First Avenue, which was initially intended as a home for the College of Nursing and additional space for the College of Dentistry, Sreeni made clear

his interest in the possibility of having space allocated for bioengineering faculty who would be able to forge collaborations not only with Dentistry and Nursing, but with the NYU School of Medicine across the street. Thus was born the NYU Bioengineering Institute, which occupies two floors in the new facility, with a third floor for

**“Sreeni is a remarkable leader
in the scientific community
and one of the most distinguished
scholars at NYU. An
unassuming man who wears
his authority lightly, he
inspires everyone he meets.”**

— Dean Charles N. Bertolami

the College of Dentistry's Department of Biomaterials. This three-floor ensemble has led to strongly collegial and collaborative interdisciplinary research projects between bioengineering faculty and dental faculty, which could never have happened without Sreeni's direct involvement.

Sreeni has a true genius for collab-

oration which has also manifested itself in invitations he has extended to investigators from dentistry, medicine, nursing, public health, and the arts and sciences to come together to explore potential partnerships. One such collaboration, between dental faculty and faculty at both Tandon and the Tisch School of the Arts, is now being explored.

Moreover, thanks to Dr. Michael P. O'Connor, who serves as the College of Dentistry's executive vice dean for administration, development, finance, clinical, and student services and was a special advisor to Sreeni during his deanship at the Tandon School, we are optimistic that our two schools' collaboration will continue and deepen in the coming year as the College moves forward with plans to open a faculty practice with expanded space also for dental education in downtown Brooklyn. We are looking for 10,000 square feet, ideally on or near the Metro Tech Campus, which houses the Tandon School.

“A remarkable leader in the scientific community and one of the most distinguished scholars at NYU, Sreeni has become a great friend of the College of Dentistry, and of mine, personally,” said Dean Bertolami. “It has been one of my great privileges to have worked closely with him. An unassuming man who wears his authority lightly, he inspires everyone he meets. We at the College of Dentistry look forward to many more years of collaboration and friendship.” ■

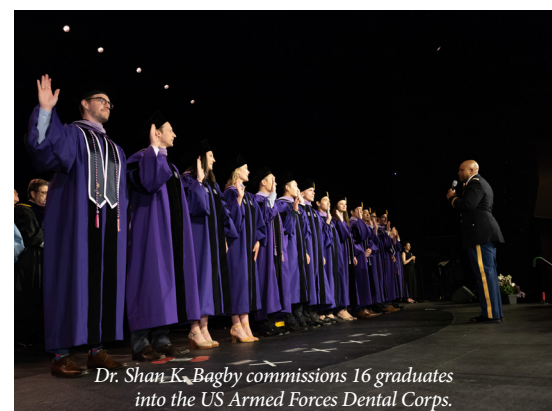
Graduation 2018



Dr. Lauren Tiffen



Dr. Hanmin Liu, '70, addresses the Graduates.



Dr. Shan-K. Bagby commissions 16 graduates into the US Armed Forces Dental Corps.



Ms. Jasleen Kaur



Ms. Divya Bhandari

On May 24, 2018, the Class of 2018, including more than 400 candidates for the Doctor of Dental Surgery degree, AAS and BS degrees in dental hygiene, dental assisting program certificates for the inaugural Dental Assisting Certificate Program class, MS degrees in biomaterials and in clinical research, and advanced education program certificates saw their dreams come true as they received their degrees and certificates before an audience of over 4,500 people in The Theater at Madison Square Garden.

A highlight of the occasion was the participation of 13 members of the Class of 1968, who were celebrating the 50th anniversary of their graduation from the College.

The David B. Kriser Medal, the highest honor awarded by NYU College of Dentistry, was presented to Dr. Hanmin Liu, a 1970 graduate of the College, founder of the US-China Educational Institute

(USCEI), trustee of the Kellogg Foundation, former chair of the Kellogg Foundation's Board of Trustees, and cofounder and president of Wildflowers Institute. For nearly 50 years, Dr. Liu has sought to build exchanges in health, education, and cultural understanding among scientific and educational leaders and professionals and to help distressed communities create the resources to thrive.

This year's Graduation Ceremony also featured two recipients of the Harry Strusser Memorial Award for outstanding contributions to public health: Dr. Scott Kellermann, cofounder and medical director of the Kellermann Foundation, and Dr. Jean Creasey, president of the Kellermann Foundation.

Since 2000, Dr. Kellermann, a family physician, and his wife, Carol, have dedicated themselves to providing healthcare, education, and community development for the Batwa pygmies, a tribe of indigenous people living



Dr. Jean Creasey receives the Strusser Award.



Dr. Shan K. Bagby addresses the graduates.



Dr. Scott Kellermann receives the Strusser Award.



Dr. Bruce Brandolin with graduates from his group practice.



in southwestern Uganda. The couple bought land, built homes, started schools and a mobile clinic, initiated clean water and sanitation projects, and showed the pygmies how to grow healthy food. They also founded a hospital that has extended health services not only to the Batwa, but also to all other residents of the region, a population of over 120,000. A nursing school and the Batwa Development Program followed.

As president of The Kellermann Foundation, Dr. Creasey has built an ever-expanding cadre of diverse and dedicated volunteers who donate their time, expertise, and, in many cases, financial support on behalf of the Foundation. Moreover, as a dentist, Dr. Creasey has been instrumental in bringing dentists from the US and the UK to Bwindi Community Hospital to treat the Batwa, and has conducted pioneering research to learn about the practice of Ebino, or infant oral mutilation, with the aim of

raising the oral health literacy of the traditional healers and the patients they minister to, while always respecting the indigenous culture.

Class Representative Divya Bhandari spoke on behalf of the AAS program in dental hygiene, and Class Representative Jasleen Kaur spoke on behalf of the BS program in dental hygiene. Dr. Lauren Tiffen spoke on behalf of the DDS program.

Alumni Association President Dr. Amin Ayoub, '92, brought greetings from the Alumni Association.

Following the presentation of degrees and certificates, an especially poignant moment occurred when Dr. Shan K. Bagby, Deputy Chief of Staff, MEDCOM and Troop Commander, MEDCOM, officially commissioned 16 newly-minted DDS program graduates entering the US Armed Forces Dental Corps, marking the third consecutive year that DDS members of the graduating class have been formally commissioned as part of

the Graduation Ceremony.

"The NYU College of Dentistry celebrates the achievements of our newest alumni, of the faculty, families, and friends who have guided them to this momentous day, and of our distinguished 2018 Kriser Medal recipient, Dr. Hanmin Liu, and our distinguished Strusser Award recipients, Dr. Scott Kellermann and Dr. Jean Creasey, and we thank Colonel Bagby for officially commissioning our graduates into the US Armed Forces," said Dean Bertolami.

"Getting to this day has taken more than hard work, dedication, and discipline," Dean Bertolami told the graduates. "It has also taken a commitment to educational excellence, a strong public service orientation, and a growing global perspective, all of which have made this class so special. We wish our graduates great success and happiness in the years ahead," he concluded. ■

In the Public Interest

First Cohort of DDS/CPH Graduates Share Their Experiences

In Spring 2017, the College of Dentistry, in collaboration with NYU's College of Global Public Health (CGPH), created a dual DDS/Online Certificate in Public Health program by which dental students can complete both the DDS degree and the certificate program within four years. The program — one of the very few of its kind in the US — recognizes that the two disciplines, dentistry and public health, are naturally complementary as both seek to improve the health of the public.

Because courses in the online certificate program are offered every semester, including the summer, DDS students do not require additional time beyond their four-year dental curriculum to graduate with the dual program option,

which offers them the opportunity to gain added expertise in providing effective public health solutions.

In addition to the DDS/CPH program, the College also entered into a joint initiative with NYU's Stern School of Business last year to create a dual degree DDS/Master of Business Administration (MBA) program. Students can complete both degrees within five years with a flexible format that balances course work with clinical practice. The first cohort of students for this program will begin in fall 2018.

Several DDS/CPH participants who graduated in May shared their views on how the certificate program has helped to shape their future career plans.



Dr. Jee Sun Kim, '18

“As an undergraduate, I was part of NYU's combined, seven-year, BA/DDS program, a joint initiative between the University's College of Arts and Science and the College of Dentistry. I had wanted to pursue the dual DDS/MPH program, but was not eligible because I was already part of a combined program, so I chose the DDS/CPH option. The program gave me a wonderful opportunity to see what it could mean to be a public health dentist.

“There was a lot of self-study in courses that held a lot of interest for me, courses like statistics and the global environment. I was able to immerse myself in the literature and learn to analyze data for presentations.

“Now, I know for certain that I'm interested in becoming a public health dentist. After practicing general dentistry for a year in Chicago, I plan to pursue an MPH and also apply to a specialty training program in pediatric dentistry. My dream is to be able to combine a pediatric dentistry and public health residency and then to practice in medically underserved areas.”



Dr. Lauren Tiffen, '18

“In the year before I entered dental school, I worked in the College’s Office of International Initiatives, which sensitized me to the tremendous unmet dental needs around the world. I felt that it was my responsibility as a future healthcare provider to prepare myself to take action to improve the situation.

“Because it encouraged me to take a holistic approach to patient care, the DDS/CPH option was the perfect introduction for me to the field of public health. As dentists we can be very much niche thinkers and it’s important to be able step back and look at the big picture. Now, I’m going off to Yale for a one-year general practice residency, which I will follow by enrolling in Yale’s MPH program, and then a second residency in endodontics, also at Yale.

“I’m very appreciative of the fact that NYU offers the CPH option, because it convinced me that I want to move forward with the MPH, become involved as a policy maker, and serve as an advocate for the highest quality healthcare for all.”



Dr. Sana Nasir, '18

“I’ve started my specialty training in pediatric dentistry at NYU this summer, and I’ve always felt that pediatric dentistry and public health go hand in hand, so I was eager to pursue the CPH option. I fully expect that I will go on to pursue an MPH degree. Last September I participated in an outreach to Nicaragua and it had such a dramatic impact on me that I would like to spend one month every year on outreach – especially on a pediatric dentistry outreach. To do that effectively, I realize that I will have to have a good understanding of the public health needs of a population.

“When I graduated in May, I received the Delta Dental Community Care Foundation Student Leadership Award, which is given to a senior dental student who has demonstrated leadership skills, a commitment to public service, outstanding accomplishments in the field of dentistry, and scholarship. I know that it was the education I received in the CPH program that helped to qualify me for this award.”

A Soothing Experience

Pediatric Anesthesia Service Adds Comfort to Children's Dental Procedures



Dr. Karlis with Lauren and Ezekiel Forsch



Drs. Karlis and Kojanis

Ezekiel “EZ” Forsch adjusted the dental face mask on Rafael, his stuffed Ninja Turtle toy, which he brought along to the NYU Dentistry Pediatric Oral Surgery Anesthesia Service in April 2018. EZ, a third-grader with a gap where his two front teeth should be, was about to have two mesiodens — extra baby teeth — removed from his upper gum.

Dr. Vasiliki Karlis, who oversees the service, observed as Dr. Lee Kojanis, chief resident in oral and maxillofacial surgery, wrapped a blood-pressure gauge around EZ’s thin arm and inserted an IV line. EZ yelped just once when the IV was put in.

EZ’s family had learned of his extra teeth from his first dental X-ray, but they had hoped the teeth would descend on their own. Now, the mesiodens were obstructing his adult teeth.

Still, it took the Forsches many months, after a change in insurance plans, to find a new dentist who would accept their insurance and then to find an oral surgery practice that would perform the relatively routine procedure. Receiving conventional dental care has been difficult because EZ has a congenital heart defect. And some places didn’t take the new insurance.

“We had been through the ringer,” says Lauren Forsch, EZ’s mother.

“When we got to NYU, they asked if we’d like an appointment in three weeks. ‘Yes,’ I said, ‘please, we’ve been waiting two years.’”

It can be surprisingly difficult to access pediatric oral surgery with sedation, as the Forsches found. For adult patients, many of the procedures done in the NYU treatment center would be performed in an oral surgeon’s office with local anesthesia alone. However, for children, having surgery without sedation is scary: Some have already had traumatic dental experiences in the past or are in a lot of pain. Sedation ensures that patients are comfortable and less likely to fear dental procedures in the future.



Dr. Karlis with Juan and Bryan Ramirez

Dr. Karlis, who completed her residency in oral and maxillofacial surgery at NYU in 1992 and then earned a medical degree at Louisiana State University-Shreveport, returned to NYU in 2002 to become the residency director. When she and her colleagues established the ambulatory oral surgery program at NYU, she felt strongly that it should serve children, too, because hospital surgical settings can be hectic and impersonal. She was also motivated by the chance to provide oral surgery residents with learning experiences across the lifespan.

"Vasiliki Karlis is great at this," says Dr. Robert Glickman, professor and chair of the NYU Department of Oral and Maxillofacial Surgery and associate dean for hospital affairs. "She saw a void, and it's a good thing, because the kids respond very well to this treatment. To do this work, you have to love kids, and she does."

The oral surgery team performs both minor and more complex procedures. "These procedures can be done in an oral surgeon's office, or on the other end of the spectrum in a hospital operating room, but from a comfort point of view, this setting is ideal," says Dr. Glickman.

On a typical day, they might remove extra teeth, expose a tooth so that an orthodontist can have access to it, or take a biopsy sample. They also see children with autism and other behavioral issues who find it difficult to sit for long in the

dental chair. And they often perform surgery on children in preparation for complicated reconstructive surgeries, for example for cleft palate or craniofacial syndromes, to be completed by their plastic surgery colleagues at NYU Langone Health.

Procedures are short — 10 to 45 minutes — and the scene is fast-paced, with up to 15 patients arriving each Thursday for consults or surgery. When children arrive at the second floor suite, they are immediately taken to a small operating room that feels more like a private doctor's office. It's a far cry from the 6:00 a.m. arrivals, long waits, and complicated prep that can happen in a hospital.

For Dr. Karlis, the service not only provides comfortable care for kids but also ensures that future oral and maxillofacial surgeons are comfortable treating them, both clinically and behaviorally. Her surgical team is composed of a senior oral and maxillofacial surgery resident, a dental assistant trained in outpatient anesthesia, and rotating dental students or pediatric postgraduate dental students. The oral and maxillofacial surgery residents have first spent five months rotating through the general anesthesia department at NYU Langone Health.

Chief resident Lee Kojanis, who has performed more than 300 surgeries under Dr. Karlis's supervision, will soon join a private oral and maxillofacial surgery practice in Englewood, New Jersey, where

he plans to treat both adults and children. The son and grandson of orthodontists, Dr. Kojanis became interested in oral and maxillofacial surgery while on an outreach visit to Machias, Maine, during his third year in dental school at NYU Dentistry. The experience made clear to him that oral and maxillofacial surgery would be a very satisfying career. "Removing a source of pain is immediately gratifying," he says.

Dr. Karlis goes to work every day in a surgical operatory bearing a nameplate that reads: "In Memory of Maria and John Karlis." The room's renovation was a gift she made with her sister, Demetra, to honor their parents' devotion to education.

At the end of EZ's procedure, he walks out, holding Dr. Karlis's hand, and is eased into a large reclining chair with his mom standing by. Soon, he is joined in the resting area by six-year-old Bryan Ramirez, carried out of the operating room by his father, Juan. Bryan, a fan of soccer, dinosaurs, and reading in both English and Spanish, also had extra teeth removed.

"Papa was more nervous," says his father, Juan, with dental assistant Katerina Cespedes translating. "Bryan is more tranquilo." He knows that strawberry ice cream awaits.

It is not unusual for children to be carried out of the operating room by their parents — instead of being placed in a wheelchair. "That's the first thing that tells you it's not an ordinary OR," says Dr. Glickman. ■

A New Chapter

*Dental Assisting Certificate Program
Transforms Lives*



On April 3, 2018, the College celebrated the graduation of the inaugural class of Dental Assisting Certificate Program students.

The first cohort of graduates — six students admitted last October to this highly selective, six-month, tuition-free pilot program — are all minority men and women who were recruited from the College's patient pool based on referrals from students, faculty, and staff.

"The program's goal is to provide highly motivated, un- or underemployed individuals who are eager to gain viable job skills — but may not have had the opportunity to do so before now — with the education and training necessary to embark on a career as a chairside dental assistant," said program coordinator Angelita Leon. The program includes all core courses in short modules taught by expert faculty from the College's Office of Allied Dental Programs alongside clinical faculty and DDS students in the Group Practices and specialty care clinics. The program consists of two, six-month, semesters annually.

All the graduates have achieved competence in understanding OSHA regulations and have been trained in the appropriate clinical and basic sciences, an electronic

health record, digital and film radiology, and communications and patient management skills.

In her opening remarks, Dr. Cheryl Westphal Theile, associate dean for allied dental programs, spoke about the great pride and confidence that all of the program faculty have in the graduates' potential to demonstrate clinical excellence, compassion, and commitment to their patients and to the dental assisting profession.

In congratulating the graduates, Dean Bertolami noted that they were all well-trained, highly marketable, and poised for a career in a stable, high-demand market. And he added, "As we celebrate your achievements, we also thank your families and friends for their support of your academic goals, and we have every confidence that you will succeed as you begin your new lives as dental assistants."

A highlight of the graduation ceremony was the participation of Councilwoman Carlina Rivera, member of New York City Council District 2, which includes the College of Dentistry. Councilwoman Rivera said that, as a person of color, she was elated by the achievements of this graduating class, and she pledged to be available to assist them in any way she could as they begin their careers. ■

2nd Annual Dean's Honors Day

A Celebration of Excellence



On April 8, 2018, the College held its second annual Dean's Honors Day, a gala celebration of major professional distinctions attained by our faculty, administrators, and staff during the previous year.

Recipients of Dean's Honors Day Awards were selected on the basis of exceptional accomplishment in the areas of teaching, research, service to the profession, innovation, and administration — both intra- and extramurally.

In his remarks, Dean Bertolami said, "The caliber of our faculty, administrators, and staff is such that each year they earn professional distinctions at a level and of a magnitude that you don't often see. With this annual event, we seek to recognize and thank them in an especially meaningful way."

Each honoree received a gift of a medallion paperweight inscribed with the NYU motto, *Perstare et praestare* — to persevere and to excel — as, Dean Bertolami said, "an emblem of the professional distinctions which you have earned and which in turn bring great honor to the College."

"As I have said on previous occasions," he continued, "the level of professional distinction within our community is what differentiates NYU Dentistry from other dental schools. As you look around the room at today's Celebration of Excellence, and as you read through the program and note all of the distinctive achievements of this elite group, I hope you will join me in congratulating our colleagues and in appreciating what a remarkable time it is to be a part of NYU Dentistry."





Amanda Muzzio, DDS, '18

*A Special Affinity for
People with Special Needs*

DDS STUDENT PROFILE

Amanda Muzzio, '18, grew up in Santa Cruz, California, and has fond memories of spending time in her maternal grandfather's dental office.

"I can remember when I was about five years old, my younger sister and I loved to play around the dental chair and equipment and pretend it was our own private dental office," says Amanda. "I never understood why kids were afraid of the dentist. 'What do you mean?' I would ask. 'Going to the dentist's office is so much fun.'"

Amanda's childhood plan to become a dentist never wavered. In high school, she enrolled in a nine-month evening program in dental assisting, which helped solidify her plans to embark on a dental career. In 2009, she began studies at California Polytechnic State University, where she earned a BS in biological sciences with a concentration in anatomy and physiology, and minors in child development and biotechnology. As an undergraduate, Amanda considered specializing in pediatric dentistry, and even shadowed a practitioner in that field.

After college, Amanda took a year off from her studies to work as an executive assistant at Santa Cruz Community Health Centers, where the patient base consisted mainly of low-income women and children.

"There are so many people out there who are in need and underserved," says Amanda. "This nonprofit healthcare setting was focused solely on providing access to care and getting everyone healthy.

It was such an inspiring experience."

Amanda began her studies at NYU College of Dentistry in 2014. She chose NYU over other programs as she had always wanted to live in New York and also appreciated the many opportunities that NYU could offer. Once enrolled, her focus began to shift away from pediatrics and toward general dentistry. In her third year, she was selected to participate in the Special Patient Care honors program, which further influenced her evolving career path. Through this program, which provides comprehensive, compassionate care to people with physical, cognitive, acquired, and developmental disabilities, Amanda says she has learned to feel confident in her ability to treat people who have needs that are different from those of the typical patient.

In 2017 and 2018, Amanda participated in "Special Patient Care at NYU Dentistry" presentations made to California Dental Association officials and state legislators and to the Commissioner of Health for New York State, respectively.

"There are 53 million Americans who have special needs," says Amanda. "That fact, coupled with the large numbers of patients who are referred to us from private dentists who do not feel comfortable treating them, suggests the extent of the problem."

Beyond her deep involvement in the Special Patient Care honors program, Amanda has immersed herself in many other aspects of life at NYU Dentistry. Under the guidance of one of her men-

tors, Dr. Analia Veitz-Keenan, clinical associate professor of oral and maxillofacial pathology, radiology and medicine and director of evidence-based dentistry in the Department of Epidemiology & Health Promotion, Amanda has been involved in research, including presenting a poster on "The benefits and perceptions of peer-assisted learning at NYU Dentistry" at the 2018 ADEA Annual Session & Exhibition.

"Amanda is very energetic, responsible, and efficient" says Dr. Veitz-Keenan. "I think she is going to be an outstanding professional."

In addition, Amanda has served as vice president of the NYU Student Chapter of the Academy of General Dentistry, admissions ambassador, a teaching assistant, vice president of the NYU chapter of the American Student Dental Association, research fellow with the American Dental Education Association (ADEA) Academic Dental Careers Fellowship Program, and pre-dental involvement chair of the NYU Chapter of ADEA.

With plans to move to a rural area in the Pacific Northwest, Amanda hopes to work in a community health setting treating underserved and special needs populations. "When it comes to my patients, I want to fully commit to them, to make them feel as comfortable as possible, both happy and safe. No matter who my patient is, I will always try to provide that experience and connect with them more than on strictly a provider/patient level." ■

A portrait of Ricardo Carvalho, a man with dark hair, smiling and wearing a light blue dress shirt and a dark tie with small white polka dots. He is sitting in front of a window with horizontal blinds. The text is overlaid on the right side of the image.

Ricardo Carvalho, '18
AAS in Dental Hygiene

*Leaving His Comfort Zone Behind
for Ever-Newer Challenges*

DENTAL HYGIENE STUDENT PROFILE

He just gets it,” says Lorilei Kirby, AAS, BS, RDH, clinical assistant professor of dental hygiene, in speaking about Ricardo Carvalho, AAS in dental hygiene, Class of 2018. Professor Kirby, who also serves as director of dental hygiene clinics and course director for dental materials, first got to know Ricardo in 2016 when he was a student in her dental materials class, a second-year course requirement. “In addition to being enthusiastic and kind, Ricardo really sees the big picture as far as providing patient care and all the different factors that go into it.”

Ricardo, who hails from Jataí, a small city in the south-central state of Goiás, Brazil, practiced dentistry in his home country for several years before coming to New York City in 2009 for what he describes as a “cultural adventure.” Upon his arrival, he immediately enrolled in an English as a Second Language (ESL) course and landed a job working as a barista at a coffee house on the Upper East Side.

“One thing you need to know about Ricardo is that he thrives on leaving his comfort zone,” says Professor Kirby. “Every time I reach a goal, I decide to move on and try something new,” Ricardo says. “That way I grow. I never expected to take a break from dentistry and work as a barista, but it was one of the most interesting experiences I’ve ever had.”

After six months in Manhattan, Ricardo began to miss dentistry and decided to reenter the field. He took the Dental Assistant National Board (DANB) exam to become a Certified Dental Assistant

(CDA) in New York and began working as a dental assistant at a group practice in the Bronx.

Ricardo’s interest in dentistry began when he was just two years old. It all started when he was playing in the park and fell on his face, breaking his front teeth.

“I broke all of my front baby teeth and then had to get braces when my permanent teeth came in,” says Ricardo. “Throughout my childhood I was always going to the dentist and I came to enjoy it. I began telling everyone that I wanted to be a dentist when I grew up.”

After high school, Ricardo enrolled in Paulista University College of Dentistry in the city of Ribeirão Preto, São Paulo, Brazil. He graduated in 2002. He then dedicated the first two years of his dental career to working in public health in Perolandia, a small town not far from his hometown, where his parents still lived.

Seeking a greater challenge, Ricardo moved to Goiânia, the capital of Goiás, where he opened a private dental practice. From 2005 to 2007, Ricardo attended São Leopoldo Mandic College. “I had to read a lot of articles in English, and that made me want to immerse myself in American culture and further improve my English.”

After three years of living in New York City and working as a dental assistant, Ricardo began to think about gaining more education in dentistry, and decided this time to focus on dental hygiene, which led him to the NYU’s AAS program.

“Today the dental hygiene field is bigger and more exciting than ever,” says Ricardo. “When you clean teeth, you are

also teaching people about prevention, and it’s as if you are a dental advisor or coach.”

In March 2018, Ricardo had the opportunity to participate in an NYU Dentistry/Henry Schein Cares Global Student Outreach to San Juan Arcos, Mexico, which he describes as a “life-changing experience.”

“After I did a cleaning for one lady, she put her hand on my head and started praying over me in Spanish, thanking me,” says Ricardo. “I was very moved. This type of underserved community is very similar to what I experienced in Brazil when I worked in public health and it made me want to return to that kind of setting.”

Ricardo hopes to partner with dentists, other dental hygienists, and dental assistants to open a dental practice in the New York metro area that treats a diverse population including recent immigrants.

Looking further ahead, he hopes to earn an MBA degree that would help him utilize his various dental education experiences on an international level.

“I would love to bring some of the current dental technologies that are used in the US to Brazil,” says Ricardo. “I also want to motivate other young people interested in dentistry in my home country to fulfill their dreams.”

Judging from his past, it’s safe to say that Ricardo will never stay too long in his comfort zone.

“He has so much to offer,” says Professor Kirby. “I think that he will be a great success both in clinical dental hygiene and in a public health setting.” ■



Making Connections

by

Arly Tuysuzian

*Director of Finance and Administration
Bluestone Center for Clinical Research
NYU College of Dentistry*

For some, yoga is merely a physical exercise. Twelve years ago, intrigued but skeptical, I took my first class. Little did I know the profound influence yoga would have on my life, and, surprisingly, on my perspective on the work that I do.

At the Bluestone Center, investigators and researchers are dedicated to translational research. Our researchers translate basic science findings into clinical practices. The practice of yoga requires a different type of translation. Yoga practices were developed to transform the fluctuations of the mind or “chitta,” into deep states of meditation.

People derive a variety of meanings from the physical, philosophical, and spiritual aspects of yoga. For me, yoga can be considered an elite form of translational research. Before the

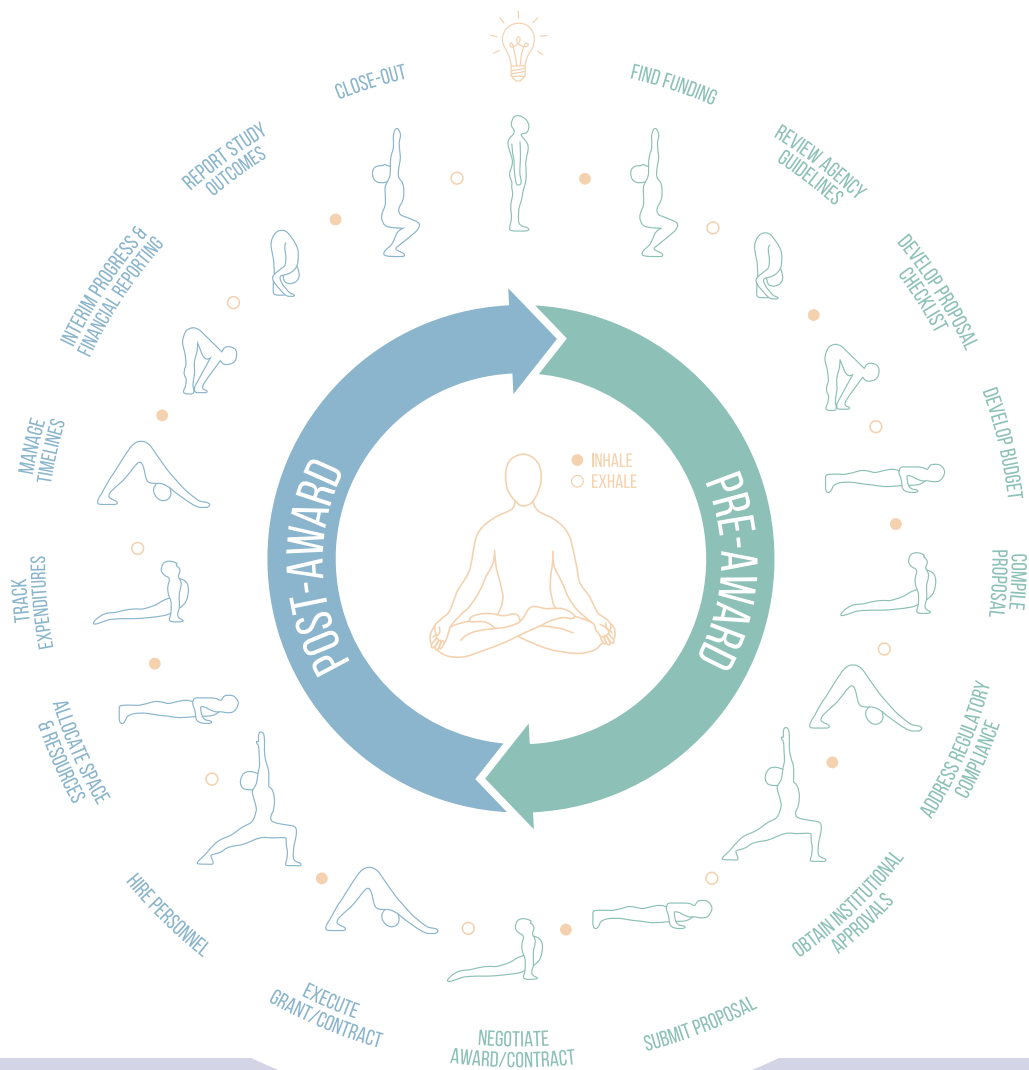
scientists reading this dismiss my brash contention, let me define yoga.

The word yoga is loosely translated from the Sanskrit word *yuj* — meaning to yolk, combine, or connect. Translational research does exactly that. For example, translational research might connect or “translate” knowledge about the biological activity of a newly discovered molecule into the development of a therapeutic application. To work toward a clinically useful outcome, researchers must assemble a formal research proposal, obtain study funding, and rigorously evaluate the safety and efficacy of new drugs or procedures. My job is to facilitate the connections in this process in order to enable the investigators to focus on what they do best — namely, science.

Even when a researcher assembles a compelling research proposal,

funding is a formidable challenge. Sponsored research at the Bluestone Center is funded largely through federal grants, foundations, and industry contracts. The majority of my work at Bluestone falls into two categories: pre-award grants and contract submissions and post-award management of research funding. My responsibilities in both phases of the award process ensure transparent adherence to various internal and external policies and regulations in order to facilitate the work of the researcher.

Pre-award work can involve submission of either foundation or government supported grants or facilitating the review of a clinical trial agreement. For grant submissions, I first determine funding agency application requirements — one of the most important aspects of my work

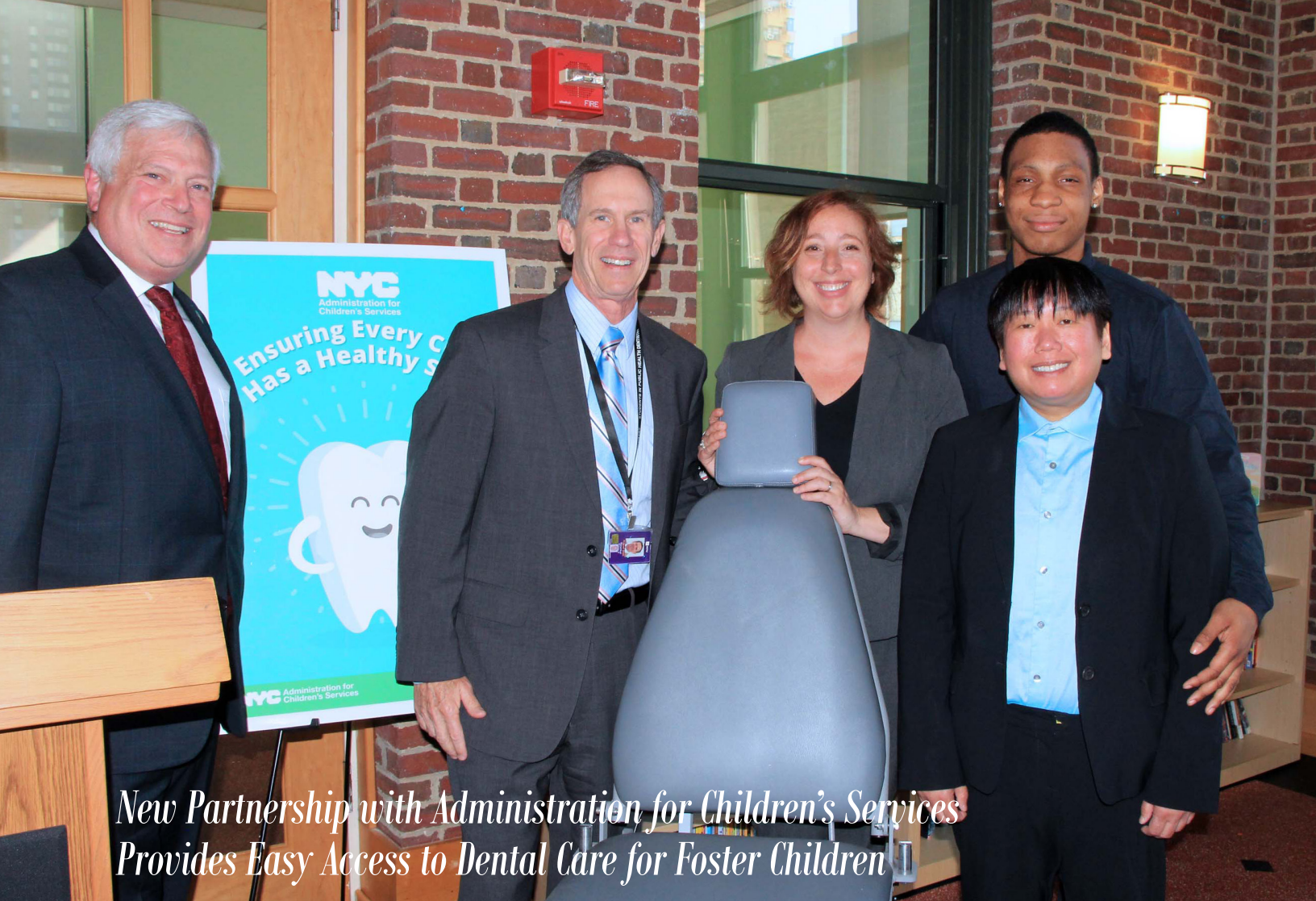


— because it allows me to address any foreseeable pitfall.

Subsequently, I talk with the principal investigator to identify requisite study resources such as personnel and equipment. And I work to gain institutional approval ahead of agency deadlines by assembling a comprehensive checklist of the required components. The budget development process is a fundamental part of the pre-award process. Government supported studies are budgeted in a rigid fashion determined by the funding agency. For industry sponsors, I'm actively involved in the budget and payment plan development, as well as in facilitating the negotiation process of the Clinical Trial Agreements between the sponsor and the Office of Science and Research at the NYU School of Medicine.

Once a study is funded or a clinical trial agreement is executed, a team of administrators and I manage the post-award process. We maintain strict adherence to our contracts and policies, which reduces audit scrutiny. To ensure financial transparency, integrity, and compliance, we oversee the account set up and management, assign or hire personnel, address major equipment and supply purchases, and initiate sub-awards or contracts. Monthly cost analyses are required for each project to review the budget and address any concerns that may result from changes or challenges emanating from the study. At the end of every study I coordinate the study's progress and financial reporting, since timely closeout is critical to meet our sponsor requirements and maintain good professional relations.

My work at the Bluestone Center and my yoga practices influence and inspire each other; both demand dedication, discipline, and endurance. To put things in perspective, over the last seven years, we have submitted over 150 grants and contracts related to translational research at the Bluestone Center. Approximately 60 of those studies have been funded, generating approximately \$17 million in sponsored research revenue. It is personally rewarding when our administrative processes improve our day-to-day operations. I am proud of the continuous efforts that my colleagues and I make at Bluestone as we continue to build an exceptional team of clinicians, researchers, administrators, and students to make the most meaningful connections. ■



New Partnership with Administration for Children's Services Provides Easy Access to Dental Care for Foster Children

The New York City Administration for Children's Services (ACS) is partnering with NYU College of Dentistry to provide dental screenings to children in foster care onsite at the Nicholas Scoppetta Children's Center in Manhattan via a mobile dental care program.

As part of this partnership, NYU Dentistry will offer weekly, 30-minute educational sessions on oral health at the Children's Center, followed by screenings and restorative treatment. Children requiring additional treatment will be referred to and seen on expedited appointments at the College of Dentistry. As the partnership progresses, the goal is to provide similar dental services for the rest of ACS' programs through New York City, where appropriate.

"Today's ACS is committed to enhanc-

ing the lives of the children we serve, and this new partnership, with NYU College of Dentistry, is one more way that we're providing the most comprehensive care possible to children in New York City," said ACS Commissioner David Hansell. "What this partnership means is that thousands of kids in foster care will have easier access to critical dental services — like screenings, fillings, and more — which will put them on track to a healthier life overall. I want to thank NYU College of Dentistry for its partnership and leadership."

Studies conducted at the NYU College of Dentistry have demonstrated that when children lose the family structure that is needed to help manage their diet, brushing, and routine dental care, it affects their oral health, including an increase in tooth decay. "NYU Dentist-

ry is committed through this program to begin the process of improving oral health for this most vulnerable group of children," said Dean Bertolami.

According to the American Academy of Pediatrics, nearly 40 percent of children in foster care have significant oral health issues. In addition to pain and infection, issues with oral health can mean difficulty eating or speaking. Children in poverty also experience twice the caries rate as those who are not poor. They are four times more likely to be untreated for these issues.

All children in foster care in New York City receive medical and dental screenings when they first enter foster care as well as ongoing dental and medical care. Having this dental clinic on-site at the Children's Center will now mean faster, easier access to dental care. ■

Dr. Leila Jahangiri Named Dr. Ira E. Klein Professor of Prosthodontics

Dr. Leila Jahangiri, clinical professor and chair of the Department of Prosthodontics, has been named the Dr. Ira E. Klein Professor of Prosthodontics.

Established in 1991, the professorship honors Dr. Klein, a distinguished member of the College of Dentistry prosthodontics faculty for over 50 years, who was instrumental in securing a major gift from Arnold and Marie Schwartz to establish the Schwartz Hall of Dental Sciences. The previous incumbents were Dr. Edward G. Kaufman, a renowned prosthodontist and former dean of the College of Dentistry, who held the chair until his retirement in 1998, and Dr. Francis V. Panno, a leader in the specialty, professor emeritus, and former chair of the Department of Prosthodontics, who held the chair from 1998 until his own retirement in 2008.

From the time Dr. Jahangiri joined the College of Dentistry, in 1995, following previous appointments at the Harvard School of Dental Medicine, from which she graduated, and the UMDNJ-New Jersey Dental School (now the Rutgers School of Dental Medicine), her penetrating intelligence, compelling teaching style, scholarly achievements, and leadership initiatives have brought her campus-wide recognition as a “go-to” person – a scientific and clinical expert, a consistently supportive, resourceful mentor, and an accessible, always welcoming colleague.

As chair of one of the College’s largest departments, Dr. Jahangiri has played a key role in establishing NYU Dentistry’s leadership and innovation in prosthodontic education. Indeed, it was during her chairmanship, in 2005, that the College introduced one of the nation’s first implant dentistry programs for predoctoral students.

Dr. Jahangiri’s teaching impact is felt equally at the postdoctoral level, where, under her tutelage, NYU postdoctoral students in prosthodontics typically garner the majority of major awards at prestigious national competitions. Appropriately, her excellence as a teacher was recognized university-wide with her selection as a recipient of the prestigious NYU Distinguished Teaching Award, which recognizes that, along with research, exceptional teaching, both within and outside the classroom, is among NYU’s institutional priorities.

Adding further to her professional distinction, Dr. Jahangiri is a global leader in her field, having written several major textbooks, including (with Tom Mucciolo): *A Guide to Better Teaching: Skills, Advice, and Evaluation for College and University Professors*, and developed treatment techniques that others teach and adopt.

For all these reasons, said Dean Bertolami, “It is especially meaningful and fitting to name Leila Jahangiri the Dr. Ira E. Klein Professor of Prosthodontics.”

Global Health Nexus congratulates Dr. Jahangiri on receiving this latest tribute to her contributions to the art and science of prosthodontics. ■



Dr. Mark Wolff Appointed Dean of the School of Dental Medicine at the University of Pennsylvania



Dr. Mark Wolff, former professor and chair of the Department of Cariology and Comprehensive Care, and senior associate dean for development and alumni relations, became the Morton Amsterdam Dean of Dental Medicine at the University of Pennsylvania, effective July 1, 2018.

Since joining NYU Dentistry in 2005, Mark, a globally recognized leader in the field of caries research and management, took a visionary approach to designing, developing, and implementing novel educational programs. As chair of the College's largest academic department, he promoted inter-professional education; launched a community-based dental education program; established a clinical care program for the

treatment of patients who are survivors of torture inflicted in their home countries; and developed a Family Translational Research Group, which has published groundbreaking findings concerning the relationship between family environment and oral health.

As associate dean for development and alumni relations, he revitalized and restructured that office. Just a few of his accomplishments in that role include recruiting a major gift from Dentsply Sirona to create the Dentsply Sirona Endodontic Suite and establishing a flourishing alumni events program.

Everyone who has worked with Mark at NYU knows him to be an exemplary teacher, researcher, and administrator, and we are confident that he will bring his considerable talents to his new position at Penn. ■

Dr. Peter Loomer to Become Dean of UT Health San Antonio School of Dentistry

Dr. Peter Loomer, clinical professor and chair of the Ashman Department of Periodontology and Implant Dentistry and director of the Center for Global Oral Health Sciences, has accepted the position of dean at the UT Health San Antonio School of Dentistry, effective February 1, 2019.

Since joining NYU in 2013, Peter has demonstrated an innovative, collaborative, and entrepreneurial mindset that has led to a series of impressive achievements in dental education, research, and patient care both at home and around the world. These include the establishment of the Center for Global Oral Health Sciences; a multifold increase in his department's clinic revenue; significantly improved patient care outcomes; new collaborative research grants with NYU Abu Dhabi,

NYU School of Medicine, NYU College of Global Public Health, and NYU Dentistry's Dental Hygiene Program, as well as new global research collaborations with Kenya, United Arab Emirates, and Brazil. It is a reflection of Peter's leadership style that he credits all of these accomplishments as chair to the partnerships he has forged with his teams of faculty, staff, and students in the department.

Through all of these initiatives, Peter has expressed his commitment to improve the health of the public through education, research, community service, and oral health advocacy.

Peter has distinguished himself as a superb academic and administrative leader at NYU and we wish him great success in his new post at UT Health San Antonio School of Dentistry. ■



Dr. Andrew Spielman Steps Down as Associate Dean for Academic Affairs

Effective January 1, 2019, Dr. Andrew Spielman, associate dean for academic affairs, stepped down from that position, having announced his decision to do so in November.

Dr. Spielman assumed the position of associate dean for academic affairs on October 1, 2001, making him the longest-serving academic dean in the College's history. His contributions to the College's academic life include playing a pivotal role in three Commission on Dental Accreditation site visits and in the major DDS curricular restructurings that took place from 2001 to 2004, as well as in 2013, and overseeing the transformation in the performance of NYU dental students on the National Board Dental Examination, leading to virtually 100% pass rates for the past nine years. He also helped to develop and restructure the DDS competency system and our com-



prehensive faculty evaluation system that is the basis for faculty promotions.

A widely-recognized expert on curriculum, Dr. Spielman has been a sought-after consultant by CODA for both mock and actual site visits. As chair of the Joint Commission on National Dental Examinations, he was instrumental in developing the new integrated National Board Dental Examination, which will be launched in 2020, and he used the expertise gained from that experience to prepare our current students for the examination.

Dr. Spielman will continue to serve as interim chair of the Department of Basic Science and Craniofacial Biology until a new chair is appointed, at which time he will return to the faculty to teach, conduct research, mentor students, curate the College's rare book collection, and serve as its unofficial historian. ■

Dr. Nicola Partridge Steps Down as Chair of the Department of Basic Science and Craniofacial Biology

Dr. Nicola Partridge, who served with great distinction as chair of the Department of Basic Science and Craniofacial Biology since 2009, stepped down as chair effective July 1, 2018. Dr. Partridge will continue as a tenured professor in the department and as the director of the Center for Skeletal and Craniofacial Biology, which she founded.

Since joining the College of Dentistry, Dr. Partridge, a national and international authority in the area of molecular endocrinology and an expert in bone and mineral research, has expanded, galvanized, and supported a critical mass of bone researchers across a variety of departments, in the process enhancing



the College's research and teaching activities — particularly in the area of bone biology — and building one of the top departments of its kind in the nation.

"Nicky Partridge has been an outstanding chair of our Department of Basic Science and Craniofacial Biology," said Dean Bertolami. "In addition to her departmental leadership and scientific expertise, she has also been a role model, one who appreciates the chance she has been given to cultivate research protégés as one of the special gifts of the academic life. I am extremely pleased that she will be staying on at the College and will continue to share her teaching and research talents with us." ■

New Issue of JADE Online Now

A new issue of NYU Dentistry's online, open-access magazine, the *Journal of the Academy of Distinguished Educators (JADE)* is online now at <http://dental.nyu.edu/jade>.

JADE is the publications component of the NYU Academy of Distinguished Educators. JADE invites experts in their fields to face off on the thorny issues confronting higher education as it endeavors to foster interdisciplinary and interprofessional education.



The new issue asks what is arguably one of the thorniest questions in dental education today: "Do dental licensing exams involving human subjects help to ensure the health and safety of the public?"

It features an introduction by Silvia E. Spivakovsky, DDS, clinical associate professor in the Department of Oral and Maxillofacial Pathology, Radiology and Medicine and JADE editorial board chair; a centerpiece article by Alexander J. Schloss, DDS, MSB (Master's in Bioethics), and adjunct clinical associate professor in the Ashman Department of Periodontology and Implant Dentistry; and commentaries by Anthony Vernillo, DDS, PhD, MBE (Bioethics) and professor emeritus in the Department of Oral and Maxillofacial Pathology, Radiology, and Medicine; and by Frank R. Recker, DDS, JD, Attorney at Law.

Comments on this topic are welcome and will be published on the JADE website.

KUDOS!

NYU Dental faculty rank 3rd nationally in the number of articles published in the *Journal of Dental Education (JDE)* in 2017.

Dr. Analia Veitz-Keenan: *Nearly Two Decades of Teaching with Passion and Pride*

Dr. Analia Veitz-Keenan, clinical professor of oral and maxillofacial pathology, radiology and medicine and director of evidence-based dentistry in the Department of Epidemiology & Health Promotion, has called NYU College of Dentistry home for more than 20 years, ever since she emigrated from her birthplace in Argentina. Her longtime association with the College started, however, not as a faculty member, but as an

internationally educated dentist who enrolled in the Advanced Placement DDS program in 1997 to pursue her US dental degree.


Prior to arriving at NYU, Dr. Veitz-Keenan practiced general dentistry in Buenos Aires after earning her first DDS degree at the University of Buenos Aires.

With the economic situation in Argentina looking gloomy in the early '90s, Dr. Veitz-Keenan came to the United States in search of better economic opportunities. Her older sister, Dr. Silvia

Spivakovsky, also an established dentist in Buenos Aires, was already enrolled at NYU Dentistry, working on earning her US dental degree. Today Dr. Spivakovsky is also on the faculty at the College, serving as a clinical associate professor of oral and maxillofacial pathology, radiology and medicine. "Everyone at the college calls us 'the sisters,'" says Dr. Veitz-Keenan.

From an early age, Dr. Veitz-Keenan had an interest in science. While her parents worked in retail, she was more influenced by some of her other relatives, aunts, and uncles who practiced dentistry and medicine. She always liked to work with her hands, which also drew her to dentistry.

"I must really like dentistry a lot because I went to school twice and I continue to practice," laughs Dr. Veitz-Keenan. In addition to her positions at NYU Dentistry, Dr. Veitz-Keenan works in private practice with her husband, Dr. James Keenan, Jr., in Sheepshead Bay, Brooklyn. Dr. Keenan is also on the faculty at the College as a clinical assistant professor of oral and maxillofacial pathology, radiology and medicine.

Dr. Veitz-Keenan's career in teaching began immediately upon her graduation from the College in 1999, when she was hired as adjunct faculty in the patient admissions area. This time commitment worked well for her as she was just opening a practice and had a young son,  and she wanted to make sure that she spent quality time with him.

"My husband and I would take him with us to all of these dental meetings when he was little," says Dr. Veitz-Keenan. "He grew up hearing lectures on dental implants and root canals. And he was always with me at my practice."

"I became a full-time faculty member



in 2004,” says Dr. Veitz-Keenan, who finds teaching to be a constant inspiration. Today she teaches patient history and physical examination, systemic pathology, care of the medically complex patient, and four courses in evidence-based dentistry.

Her expertise in teaching evidence-based dentistry has become a career highlight for her. Evidence-based dentistry is an approach to oral health and overall healthcare that integrates the dentist’s clinical expertise, the patient’s needs and preferences, and the most current, clinically relevant evidence. All three of these comprise the decision-making process for patient care. In 2011, Dr. Veitz-Keenan’s passion for evidence-based dentistry led to her spearheading a partnership between NYU College of Dentistry and the Cochrane Collaboration, which produces the Cochrane Reviews. These assessments are considered the gold standard for evidence-based healthcare.

“Questioning treatment methods is an important part of practicing dentistry,” says Dr. Veitz-Keenan. “Often we have new techniques, but there may not be enough evidence supporting their effectiveness,” she says. “Over the years at my practice I would often invest in whatever was new, since that was what the patient expected. Take certain teeth whitening procedures, for example. But we have to ask ourselves as practitioners, ‘Do we have the evidence to support the claim that certain methods are really effective?’”

In teaching evidence-based dentistry, Dr. Veitz-Keenan works to help students interpret evidence in relation to how they are going to practice, whether that means as individual practitioners, in a group practice, or in a public health setting.



“Teaching evidence-based dentistry helps students develop sharper critical thinking skills,” she says. “Interpretation of evidence can be controversial at times, but it also helps ensure that we in the dental profession keep changing and adapting to best fit our patients’ needs.”

Today Dr. Veitz-Keenan teaches five days a week and works at her private practice on Saturdays.

“I really enjoy watching the students grow,” she says. “It’s so wonderful to see their evolution — how much they change from their first year up until graduation. I

love to witness them becoming passionate and discovering their niche.”

In 2016, Dr. Veitz-Keenan received the NYU Distinguished Teaching Award, the University’s highest teaching honor. This award honors those who exhibit excellent teaching, both within and outside the classroom. She was one of just five faculty members University-wide to receive the award that year.

“I just love my students,” says Dr. Veitz-Keenan. “I may have only one biological child, but I have many more young adult-age children at the College.” ■

Where it all started:

*left: the future doctors — sisters Silvia and Analia
right: Dr. Veitz-Keenan at her NYU Graduation*





GRANADA, NICARAGUA

Sept. 19-Oct. 1, 2017

While we see incredible improvements in oral health and fewer cavities (a 30% decrease!) in children in schools we partner with around the world, we also find that there are many children who do not receive any dental care until it is too late. Children who arrive as walk-in patients need significantly more dental care, including extractions, than the participating schoolchildren. This demonstrates the impact that early preventive programs like the NYU Dentistry/Henry Schein Cares Global Student Outreach Program can have in building sustainable oral health in remote communities.

— Joe Geiger, Class of 2019



DUTCHESS COUNTY, NEW YORK

October 15-19, 2017



**SURKHET,
NEPAL**
Oct. 28-Nov. 7, 2018



“One of the coolest things about supervising oral surgery this week was performing full mouth extractions in monks so they were able to get full dentures. When they get their dentures, it’s an amazing feeling to watch their faces finally relax and smile.”

— Dr. Nick Zawada, '12
Alumni Oral Surgery Faculty



**KATHMANDU,
NEPAL**
November 2-12, 2017

“This outreach experience surpassed all of my high expectations. It not only exposed me to a new community, culture, and country, but it also expanded my understanding of global public health, the role we can play as dentists in the bigger picture, and how we can work together to provide healthcare to other populations.”





PHNOM PENH, CAMBODIA

January 19–28, 2018

Where to start?! My interest in pediatric dentistry was ignited when I went on my first outreach trip to Trujillo, Peru, in my second year of college and applied fluoride varnish on children's teeth for the very first time (top picture). Now here I am, eight years later, spending the past week in Phnom Penh, Cambodia, actually treating children, on NYU Dentistry's first-ever dental outreach to Cambodia. I have had the most incredible experience by having the opportunity to work side-by-side with some of the most skilled and accomplished NYU faculty treating grade school children at a local elementary school. A week of learning, enhancing my clinical skills, and most important of all, doing a service for children who need it the most has been an absolutely fantastic experience and I will never forget it. To top off my pediatric intensive global outreach trip, I found out I matched to my first choice, NYU, for the pediatric dental residency program. I am absolutely beyond excited for this new journey to begin and can I just say, what better way to find out about my match than to be in Cambodia with some pretty cool pediatric dentists and one of my best friends, after working hard to treat the most adorable Cambodian children for the past week? I am so blessed to have all of my friends and family who've always supported me throughout these past years. Pediatric dentistry, here I come!

— Meera Rathi, Class of 2019

I find it frustrating that dentistry is seen as a “cosmetic” field by so many. Often, people who make healthcare policy fail to realize the dire — even deadly — consequences of oral neglect, and thus how important routine dental care is to overall health of the population. In America, your smile is a “status symbol” and can be the determinant between employment and unemployment. People are judged negatively when they have poor oral health and broken-down teeth, yet there is an unwillingness among many to make access to routine dental care a priority. I don't believe anyone would choose an unhealthy smile, yet this is often how people are treated. In Cambodia, while there seemed to be plenty of dental clinics around, the children we saw clearly did not have access to care. It was frustrating to see the stark contrast between the haves and the have-nots, especially when we saw that this was affecting the youngest members of the population who were left to cope with an overwhelming amount of decay in their mouths.

Seeing the severity of decay in Cambodia really helped me to understand how significant the need is and how important access to preventive programs from an early age is. We have learned about determinants of health, and I thought a lot about what factors are working to cause the level of disease we saw. I saw how failure to enforce well-intentioned policies (no unhealthy snacks can be sold at schools) or programs (tooth brushing in school) drove a higher disease prevalence in this community. It drove home the idea that policies/programs are truly just ideas if there is no follow-up to ensure compliance, and how important it is to identify the causes (or potential causes) of non-compliance to ensure maximum impact. This outreach helped not only to concretely define the challenges and disease burden we face in oral public health, but also pushed me to think more deeply about the programs we implement and what determines their efficacy both in the short and long term.

— Nina Hyvarinen, Class of 2020



Participating in NYU's dental outreach to Mexico was a life-changing experience. More than ever in my life, I felt a part of a creative and dedicated team that was making a major impact on the health of a community. Working with Dr. Saccomanno and the endodontics team gave me skills and experience to complete root canal therapy confidently AND helped me solidify my career goals - I hope to return to an NYU outreach as endo faculty myself one day!"

Living in New York City, it is easy to get lulled into the stability of first world living, and the comforts of a modern dental office. Doing dentistry on an outreach is a reminder of how much can be done in just a few days (given a TON of preparation, energy, and passion).

— Nadia Newman, Class of 2018



In Machias, Maine, the opioid epidemic we have all heard about is the community's circumstance. I felt so privileged to provide dental care to this warm and generous community. How much I loved the energy within our clinic, how inspired I felt by the people who strive to make ends meet for their children and how our community partners' zeal and courage were unwavering. That would have been everything, except for the one crucial fact that is hard for me to accept but nonetheless defines a big part of what my experience taught me: social determinants of health are massive impediments in access to care and simply put they are not fair."

— Michelle Michelson, Class of 2019



From April 6–15, 2018, Drs. Colleen A. Watson and Cheryline Pezzullo, along with six dental students — Felicia Nicolas, '18; Nadine Darwiche, '19; Branden Brar, '19; Esmeralda Amador, '20; Ashley Ortiz, '20; and Haley Rosenberg, '20 — traveled to Cuba to study the Cuban dental health system. While in Cuba, they visited the School of Public Health, the School of Medicine, the School of Dentistry, and local dental clinics.

In addition to the site visits, the group attended several lectures including those on Global and Com-

munity Outreaches, Health Promotion, US/Cuba Relations and Cuban Public Health infrastructure. The group was also able to discuss and meet with Cuban dental students and faculty, visit several community projects in underserved areas, and learn about traditional holistic medical practices used in Cuba.

Faculty and students were able to successfully study how dental care is delivered in Cuba and to identify parts of the Cuban system that could be adapted for improved access to care in underserved rural communities in the United States.

Cuba is a beautiful country full of wonderful art, music, food, community, and of course their world-renowned health care system. The primary reason for our visit was to research the public healthcare system and be able to implement what we learned in our curriculum at NYU. Through this research we hoped to further our efforts to provide care and outreach to those in need in our own communities in New York. From the moment I landed in Cuba, until the day I left, I felt welcomed by the members of the community. This feeling was further strengthened when we visited family doctors, the polyclinics, the National School of

Public Health (ENSAP), community outreach projects, and the Latin American School of Medicine (ELAM). The directors of these institutions gave us lectures on Cuba's health and dental care system, the training given to the health care professionals, Cuba's dental education, U.S and Cuba relations, international brigades and Cuban medical services. They opened their doors for us, encouraged us to ask questions, and welcomed us back any time we would like because now, as they said many times, "they felt like we were a part of their family." I was blown away by their sense of community and their duty to serve everyone

without discriminating against those who could not afford the care. I hope to carry this sense of community everywhere I go and I thank the Cubans for being an example for other countries in terms of health-care accessibility. Ever since this trip, I remind myself that we need to allocate resources responsibly and we need to be in constant communication with the community on public health concerns. Most importantly, we need to foster a strong sense of community through education and bringing people of all kinds together in the fight for global wellness and health.

— Ashley Ortiz, Class of 2020





“ This past April I had the opportunity to travel to Cuba, a nation with beautiful landscape, and rich culture and history. This was my first experience travelling outside of North America, which allowed me to have a unique and unbiased perspective, but also left me a little apprehensive. I quickly came to learn that the Cuban people were kind, friendly, and welcoming. I was amazed to see that Cubans, despite having limited means, were happy and thriving. I feel that a large part of this happiness came from their sense of community. Despite being a foreigner, I also felt that I was a

part of this community and that gave me a sense of safety during our trip. When visiting different parts of Cuba, we were instantly immersed in an abundance of culture and history, making me feel a sense of belonging. Most striking to me was the absence of homelessness and illness. It was rare to come across an individual who did not have intact dentition or a denture. This is in part due to their free dental care, but more likely their focus on preventive healthcare allowing them to make the most of their healthcare spending. The time we spent in Cuba made me realize that there is much

to be learned from a public health prospective on how we can improve access to care, prevention, and the allocation of resources both at home and abroad. This was a transforming trip, one that I hope other students will have the opportunity to experience. Our short time in Cuba changed my outlook on oral healthcare and has opened my mind to alternatives that may exist to help supplement our current healthcare efforts. I look forward to learning more about the Cuban culture and healthcare system, with the hope of returning sometime in the future.

— Brandon Bar, Class of 2019



World Health Organization Official Urges United Nations Member States to Prioritize Oral Health at NYU Event

Accelerating global progress in oral health was the focus of a United Nations (UN) side event hosted by NYU College of Dentistry and its World Health Organization (WHO) Collaborating Center, together with NYU College of Global Public Health, on Friday, September 28, 2018. The event followed the UN 3rd High-Level Meeting on Noncommunicable Diseases, held September 27 at the UN Headquarters in New York.

Oral diseases — which affect half of the world's population — are rarely included in noncommunicable disease prevention efforts. The event promoted the integration of oral health in all efforts to prevent and control noncommunicable diseases.

“Good oral health is a crucial element of overall health and, as such, part of the human right to health,” said Svetlana Axelrod, the WHO Assistant Director General for Noncommunicable Diseases and Mental Health, during her keynote address at the event.

To ensure that oral health is no longer neglected on the global health agenda, Axelrod called upon UN Member States, the oral health community, and other stakeholders to strengthen their commitment to address oral health as a priority area. This includes integrating oral disease

prevention with the prevention of noncommunicable diseases by addressing common risk factors. She also encouraged countries to mobilize resources to enhance collaborations and partnerships to implement cost-effective oral health interventions.



Habib Benzian (left) with Svetlana Axelrod, WHO Assistant Director General for Noncommunicable Diseases and Mental Health, and Richard Niederman

Finally, Axelrod urged countries “to include essential oral health care services as part of Universal Health Coverage initiatives to ensure that no one is left behind.”

“The NYU College of Dentistry WHO Collaborating Center, in tandem with the NYU College of Global Public Health, is ready to provide technical expertise and capacity building to improve oral health globally,” said Richard Niederman, chair of the Department of Epidemiology & Health Promotion at the NYU College of Dentistry and director of the WHO

Collaborating Center.

“There is no other disease on the planet as common as untreated tooth decay. Yet, the United Nations’ 3rd High-Level Meeting on NCDs failed to recognize oral diseases. Thus, the side event was even more important

to raise their importance in the noncommunicable disease context,” said event moderator and convener Habib Benzian, adjunct professor at NYU’s Colleges of Dentistry and Global Public Health and associate director of global health and policy for NYU Dentistry’s WHO Collaborating Center.

The side event was co-sponsored by the Minister of Health of the Kingdom of Morocco, Anass Doukkali, and Isaïe Medah, Director General of Public Health in Burkina

Faso representing Minister of Health Nicolas Meda. They shared their respective countries’ work on noncommunicable diseases and oral health and pledged increased attention to the growing burden of oral diseases.

Event attendees also heard from public health advocates and international oral health experts. Discussing the global public health challenges of oral diseases, Richard Watt of the University College London, highlighted the massive global disease burden and the need to include oral health in upstream policy measures. Stefan Listl



of Radboud University in the Netherlands emphasized that prevention is possible and highly cost-effective. He also warned that inaction on oral diseases will be costly to all health systems and will lead to high patient out-of-pocket payments that may contribute to increased impoverishment.

In a series of presentations about how public health efforts on oral health and noncommunicable diseases can be integrated, Paula Moynihan of Newcastle University, who directs the WHO Collaborating Center for Nutrition and Oral Health, spoke of how the relation between tooth decay and sugar intake informed the WHO sugar guidelines that recommend levels of sugar intake. This was reinforced by Francesco Branca, WHO Director of Nutrition for Health & Development, who acknowledged that nutrition and

sugar intake are major common risk factors for noncommunicable diseases and oral health that require joint policy responses.

NYU Dentistry's Niederman made a case for early and low-cost investments in prevention to address the global epidemic of tooth decay, and affirmed the WHO Collaborating Center's commitment to improving oral health worldwide.

"Next year's UN High-Level Meeting on Universal Health Coverage will provide another opportunity to join forces and to make essential oral health care available and affordable for everyone," added Dr. Niederman.

The event concluded with a panel discussion involving representatives from different sectors and stakeholder groups to explore what each sector — government, professional, corporate,

civil society, academia, and research — can contribute in order to end the global neglect of oral health. The panelists included Chris Dickey of NYU College of Global Public Health, Michael Glick of FDI World Dental Federation, Nina Renshaw of the NCD Alliance, President-elect Paula Moynihan of the International Association of Dental Research (IADR), and Henry Schein CEO and Chairman of the Board Stanley Bergman. They agreed on the importance of collaboration between sectors and discussed pathways to jointly and effectively accelerate tangible global and local action on oral health.

NYU Dentistry's WHO Collaborating Center — the only WHO Collaborating Center on oral health in the Americas — aims to foster oral health policy dialogue globally and the translation of evidence into practice. ■

MS. SARAH ADU, on being appointed a sterilization technician in the Central Sterilization Unit.

DR. LENA AL-SABBAN, clinical assistant professor of oral and maxillofacial surgery, on coediting a book chapter titled "Geriatric Dentistry: Maintaining Oral Health in the Geriatric Population" for Brocklehurst's Textbook of Geriatric Medicine and Gerontology, 8th edition. Dr. Al-Sabban's coeditors included **DR. ROBERT S. GLICKMAN**, professor and chair of the Department of Oral and Maxillofacial Surgery and associate dean for hospital affairs, and **DR. ANDREA S. SCHREIBER**, senior associate dean for education and clinical professor of oral and maxillofacial surgery.

DR. KENNETH ASCHHEIM, adjunct clinical associate professor of cariology and comprehensive care, on being interviewed by ADA News for an article titled "ID'ing Human Remains with Dental Records"; on being appointed chair of both the ADA Standards Committee on Dental Products Dental Terminology subcommittee and the Terminology for Forensic Oro-dental Data working group; and on receiving the Distinguished Individual Service Award presented by the Forensic Science Standards Board (FSSB) of the National Institute of Standards and Technology (NIST) for his service as chair of the NIST Odontology subcommittee.

MR. WILLIAM M. BAUM, adjunct instructor in the Department of Prosthodontics, on authoring "The Keystone of Success: Dental Technicians and the Restorative Dental Team on Implant Cases" for the September 2017 issue of *Inside Dental Technology*.

MS. ANDREA BEALL, adjunct clinical assistant professor of dental hygiene, on coauthoring an article titled "Collaborative Interprofessional Education Models" for *Access*, the magazine of the American Dental Hygienists' Association. Professor Beall's coauthor was **MS. LISA STEFANOU**, clinical associate professor of dental hygiene.

DR. LAWRENCE E. BRECHT, adjunct clinical associate professor of prosthodontics, on being appointed a council member of the Greater New York Academy of Prosthodontics.



DR. DONNA G. ALBERTSON, professor of oral and maxillofacial surgery, on receiving the 2017 Outstanding Investigator Award presented by the National Cancer Institute (NCI) for her work on four NCI Special Emphasis Panels: "Molecular and Cellular Analysis Technologies"; "NCI R03 and Clinical and Translational R21: Sep-7" (chair); "Revision Applications for Biological Comparisons in Patient-derived Models of Cancer" (chair); and "Cancer Target Discovery and Development Network (U01)."



DR. BRADLEY AOUIZERAT, professor of oral and maxillofacial surgery, on coauthoring a study titled "Machine Learning Helps Detect Lymphedema Among Breast Cancer Survivors."



DR. HABIB BENZIAN, adjunct professor of epidemiology and health promotion, on organizing and co-chairing four featured presentations — "Leveraging Sustainable Development Goals to Reduce Oral Health Inequalities," "Oral Health Recommendations in 'Disease Control Priorities' (World Bank, 2017)," "Fluoride Toothpaste as a Public Health Tool: Strengthening Global Impact," and "Fit For School: Improving Determinants of Child Development" — at the 11th International Association for Dental Research (IADR) World Congress on Preventive Dentistry.



DR. GARY S. BERKOWITZ, clinical associate professor of cariology and comprehensive care and group practice director, on receiving the Boy Scouts of America Theodore Roosevelt Council Centennial Service Award.



MS. SHIRLEY BIRENZ, clinical assistant professor of dental hygiene, on being appointed to the Public Relations Committee of the American Academy of Dental Hygiene for 2017–2018.



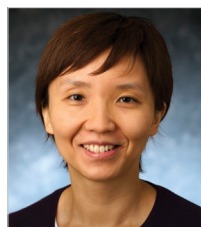
DR. WILLIAM W. BONGIORNO, clinical instructor in the Department of Cariology and Comprehensive Care, on co-chairing the Essays and Scientific Poster Session committee of the 2017 Greater New York Dental Meeting, and on being appointed a trustee of the New York State Dental Association (NYSDA) Second District Dental Society.



DR. DONNA CATAPANO-MARTINEZ, clinical assistant professor of dental hygiene, on co-authoring "Improving Oral Health with Polyphenols" for *Dimensions of Dental Hygiene*.



DR. PHILIP BUCCIGROSSI, adjunct clinical instructor of cariology and comprehensive care, on being appointed a trustee of the NYSDA Second District Dental Society.



DR. K.C. CHAN, clinical assistant professor of oral and maxillofacial pathology, radiology and medicine, on being appointed Chief Examiner in Oral and Maxillofacial Radiology for the Royal College of Dentists of Canada, and on being appointed an officer of the American Academy of Oral and Maxillofacial Radiology Predoctoral Education Committee.



DR. JOHN R. CALAMIA, professor of cariology and comprehensive care, on being appointed to the American Academy of Cosmetic Dentistry (AACD) University Relations Committee and Awards and Recognition Committee, and on becoming a member of the Board of Directors of the AACD for 2018.



DR. MIJIN CHOI, clinical associate professor of prosthodontics and director of the Jonathan and Maxine Ferencz Advanced Education Program in Prosthodontics, on being elected past president of the New York Section of the American College of Prosthodontists; on being appointed co-director of the Prosthodontics Group of the IADR; and on reviewing four articles for the *Journal of Prosthodontics* in 2017: "Effect of Alkaline Peroxides on the Surface of Cobalt Chrome Alloy: An In Vitro Study," "Evaluation of the Accuracy of Conventional and Digital Impression Techniques," "Prosthetic Rehabilitation After Mandibular Ameloblastoma Resection: A Case Report," and "Comparative Evaluation of Efficacy of Gingival Retraction Using Chemical and Mechanical Methods: An In-Vivo Study."

The following students and a faculty member on receiving awards at the 2018 American Academy of Cosmetic Dentistry (AACD) Poster Competition in Chicago:

DR. ALLA CHEBAN, '18 (NYU Honorable Esthetic Achievement Poster Students (HEAPS) Award); **DR. DAVID FINKELSTEIN**, '18 (1st place – Clinical Case Undergraduate Poster Competition); **DR. MEHRNAZ GOLMAKANI**, '18 (3rd place – Clinical Case Undergraduate Poster Competition); **DR. RAVEENA SINGH**, '18 (4th place – Clinical Case Undergraduate Poster Competition); **DR. CHEE HAN TEO**, Advanced Program for International Dentists in Esthetic Dentistry, '18 (1st place – Clinical Case Postgraduate Poster Competition); **DR. BHAVNA GANGWAL**, Advanced Program for International Dentists in Esthetic Dentistry, '18 (2nd place – Clinical Case Postgraduate Poster Competition); **DR. BEATRIZ ZAVALA MENDOZA**, Advanced Program for International Dentists in Esthetic Dentistry, '18 (3rd place – Clinical Case Postgraduate Poster Competition); and **DR. NANTAWAN KO-LAKARNPRASERT**, Master of Science in Biomaterials, '18, Advanced Program for International Dentists in Esthetic Dentistry, '16 (1st place – Material Science Postgraduate Poster Competition). **DR. VINCENT J. CALAMIA**, adjunct clinical instructor in the Department of Cariology and Comprehensive Care, placed first in the Clinical Case Junior Faculty Poster Competition.



DR. STEPHEN J. CHU, adjunct clinical professor of prosthodontics, on being appointed a 2017 council member of the Greater New York Academy of Prosthodontics; on being appointed to the editorial advisory board of the *Journal of Esthetic and Restorative Dentistry*; and on presenting a guest lecture titled "Prosthodontic Strategies in Peri-implant Soft Tissue Preservation Around Implant Placed into Extraction Sockets in the Esthetic Zone" at the University of Missouri-Kansas City (UMKC) School of Dentistry 2017 Dental Implant Symposium.



DR. PAULO G. COELHO, Leonard I. Linkow Professor of Biomaterials, on presenting a symposium titled "Peri-Implant Tissue Healing/Maintenance in Systemically Compromised Scenarios" at the March 2017 IADR/AADR/CADR General Session; and on coauthoring an article titled "Three Dimensionally Printed Bioactive Ceramic Scaffold Osseointegration Across Critical-sized Mandibular Defects" for the *Journal of Surgical Research*. Dr. Coelho's coauthors included **DR. CHRISTOPHER D. LOPEZ**, a junior research scientist in the Department of Biomaterials, and **DR. LUKASZ WITEK**, assistant professor in the Department of Biomaterials.



DR. ANANDA P. DASANAYAKE, professor of epidemiology & health promotion, on being invited to serve on two National Institutes of Health (NIH) Center for Scientific Review Special Emphasis Panels: "Establishing Behavioral and Social Measures for Causal Pathway Research in Dental, Oral and Craniofacial Health" and "Adolescent-centered Contraceptive Counseling"; on being appointed to four NIH Center for Scientific Review Study Sections: "Dissemination and Implementation Research in Health," "Oral, Dental and Craniofacial Sciences," "Health Services Organization and Delivery," and "NIH Director's Early Independence Award Review"; on being invited to serve on four NIH-NIDCR Special Emphasis Panels; and on presenting the keynote address at the Chulalongkorn University Faculty of Dentistry 2017 Research Day.



DR. ALI ALPER COMUT, clinical associate professor of prosthodontics, on being appointed treasurer of the New York Section of the American College of Prosthodontists.



DR. YVONNE DE PAIVA BUISCHI, clinical associate professor of periodontology and implant dentistry, on receiving an American Academy of Periodontology (AAP) Foundation Institute for Teaching & Learning in the Health Professions Fellowship; on being appointed to the International Member Working Group of the AAP Membership Advisory Committee; on being featured in the Henry Schein Cares *Helping Health Happen*® blog post titled "Daraja Academy Empowers Girls to Own Their Health, Education, and Future"; on coauthoring "Periodontal Disease as a Risk Factor for Acute Myocardial Infarction" for *EC Dental Science*; on coauthoring "Osteoporosis, Tooth Loss and Periodontitis in Brazilian Postmenopausal Women" for *EC Gynaecology*; and on coauthoring "Factors Associated with Dental Caries, Periodontitis and Intra-oral Lesions in Individuals with HIV/AIDS" for *AIDS Care*.



DR. YASMI O. CRYSTAL, adjunct clinical associate professor of pediatric dentistry, on coauthoring a book chapter titled "The United States of America" for *A Compendium on Oral Health of Children Around the World: Early Childhood Caries*; on being appointed chair of the Evidence-based Dentistry (EBD) Committee of the American Academy of Pediatric Dentistry (AAPD); on coauthoring an AAPD-EBD clinical practice manuscript titled "Use of Silver Diamine Fluoride for Dental Caries Management in Children and Adolescents, Including Those with Special Health Care Needs;" and on coauthoring "Parental Perceptions and Acceptance of Silver Diamine Fluoride Staining" for the *Journal of the American Dental Association*. Dr. Crystal's coauthors included **DR. MALVIN N. JANAL**, senior research scientist and adjunct associate professor of epidemiology & health promotion; and **DR. RICHARD NIEDERMAN**, professor and chair of the Department of Epidemiology & Health Promotion.



DR. ELISE EISENBERG, senior director of informatics and adjunct clinical professor of epidemiology and health promotion, on being appointed chair of the American Dental Education Association (ADEA) Council of Sections Administrative Board.

DR. DEBRA H. COHN, adjunct clinical assistant professor of prosthodontics, on being appointed a 2017 council member of the Greater New York Academy of Prosthodontics.



DR. LAUREN FELDMAN, clinical assistant professor of pediatric dentistry, on coauthoring a book chapter titled "Clinical Oral Health Care for Children (3 to 5 Years)" for *Promotion of Maternal and Child Oral Health*. Dr. Feldman's coauthors included **DR. AMR M. MOURSI**, professor and chair of the Department of Pediatric Dentistry.



MS. JILL B. FERNANDEZ, clinical associate professor of pediatric dentistry, on being inducted into the Delta Omega Honorary Public Health Society, Delta Beta Chapter, at the NYU College of Global Public Health.



DR. KENNETH E. FLEISHER, clinical associate professor of oral and maxillofacial surgery, on receiving an American College of Surgeons Fellowship.



DR. LAURIE R. FLEISHER, clinical assistant professor of cariology and comprehensive care and of endodontics, on being appointed councilor for the ADEA Section on Endodontics; member-at-large of the ADEA Leadership Institute Alumni Association Administrative Board; a member of the American Dental Association (ADA) Joint Commission on National Dental Examinations (JCND) Test Construction Committee for the Integrated National Board Dental Examination (INBDE); a member of the Scientific Advisory Board of the *Journal of Endodontics*; of the editorial boards of both *Dental Research: An International Journal (DRIJ)* and the *International Journal of Experimental Dental Science*; and on coauthoring an article titled "Lost in the Arctic" for *NYSDA News*. Dr. Fleisher's coauthor was **DR. WILLIAM J. MALONEY**, clinical associate professor of cariology and comprehensive care.



DR. ROBERT FRARE, clinical instructor of oral and maxillofacial pathology, radiology and medicine, on reviewing a case report titled "Aesthetic Crown Lengthening Surgery Guided by Cone-beam Computed Tomography — A 6 Months Follow-up Case" for *Modern Research in Dentistry*.



DR. STUART J. FROUM, adjunct clinical professor of periodontology and implant dentistry, on being quoted in a *Dental Economics* article titled "Past, Present, and Future of Narrow Diameter Implants;" and on coauthoring an article titled "Long-term Retrospective Evaluation of Success of Narrow-diameter Implants in Esthetic Areas: A Consecutive Case Series with 3 to 14 Years Follow-up" for the *International Journal of Periodontics and Restorative Dentistry*. Dr. Froum's coauthors included **DR. YE SHI**, Advanced Education Program in Periodontics '20, Advanced Program for International Dentists in Implant Dentistry '16, and International Implant Dentistry Fellow '17; **DR. FRANCOIS FISSELIER**, Advanced Program for International Dentists in Prosthodontics '10, Advanced Program for International Dentists in Implant Dentistry '12, Jonathan and Maxine Ferencz Advanced Education Program in Prosthodontics '15; and **DR. SANG-CHOON CHO**, clinical assistant professor of periodontology and implant dentistry.

MS. GRACE EMPERIO, a registered nurse, on being appointed to a nursing position in the Health Screening Unit. **DR. SIVAN FINKEL**, adjunct clinical instructor in the Department of Cariology and Comprehensive Care, on coauthoring an article titled "Layperson's Perception of Axial Midline Angulation in Asymmetric Faces" for the *Journal of Esthetic and Restorative Dentistry*.

MR. CHAEN FONG on being appointed a senior systems administrator for Technology and Informatics Services.



MS. WINNIE FURNARI, adjunct professor of dental hygiene, on coauthoring "A Cursory Review of Forensic Dentistry" for *RDH Magazine* and "Patients' Willingness to Participate in Rapid HIV Testing: A Pilot Study in Three New York City Dental Hygiene Clinics" for the *Journal of Dental Hygiene*; on being awarded fellowship in the American Academy of Forensic Sciences; on being elected president-elect of the American Academy of Dental Hygiene (AADH) for 2017–2018; and on being appointed to the AADH Annual Meeting Committee, the Minutes Review Committee, the *AADH Times* Review Committee, and the Finance Committee.



DR. ANA B. GIGLIO, adjunct clinical associate professor of periodontology and implant dentistry, on being appointed a trustee of District 7 of the American Academy of Periodontology, and on being elected past president of the Northeastern Society of Periodontists.



DR. ROBERT S. GLICKMAN, professor and chair of the Department of Oral and Maxillofacial Surgery and associate dean for hospital affairs, on presenting a state mandated "Pain Management, Palliative Care, and Addiction Education/Training for Prescribers" course sponsored by the NYSDA Second District Dental Society.



DR. DAVID L. GLOTZER, clinical professor of cariology and comprehensive care, on presenting a Continuing Education course titled "All Hazard (Bioterrorism) Preparedness for the Dental Team" at the Nassau County Dental Society 2018 General Meeting, and on presenting the Basic Disaster Life Support course for the NYC Medical Reserve Corps in June.

DR. IGOR GERZON, adjunct clinical assistant professor of prosthodontics, on being appointed a council member of the Greater New York Academy of Prosthodontics.

MS. GABRIELA GONZALEZ, on being appointed an administrative aide in the office of the Executive Vice Dean for Administration, Development, Finance, Clinical, and Student Services.



DR. BENJAMIN GODDER, clinical associate professor of cariology and comprehensive care, on coauthoring an article titled "Two-year Clinical Evaluation of One-step Composite System vs. Two-step Composite System in Posterior Teeth" for *The New York State Dental Journal*. Dr. Godder's coauthors included **DR. TERESITA SALGADO**, clinical assistant professor of cariology and comprehensive care.



DR. GARY R. GOLDSTEIN, formerly professor of prosthodontics, on being awarded professor emeritus status. In addition, the Department of Prosthodontics honored Dr. Goldstein with the establishment of the Dr. Gary Goldstein Award for Excellence in Prosthodontics and with the Dr. Juliet Kafka-Bergen Award for Outstanding Mentorship. Added kudos to Dr. Goldstein on coauthoring an article titled "Evidence-based Prosthodontics: 25 Years Later" for the *Journal of Prosthetic Dentistry*, and an article titled "Defining the Ascending Ramus: A Search" for the *Journal of Prosthetic Dentistry*. Dr. Goldstein's coauthors included **DR. SANTVANA VYAS**, Jonathan and Maxine Ferencz Advanced Education Program in Prosthodontics '19.



MS. EMILIE GRODMAN, '21, on being elected a student research fellow of the American Association for Dental Research (AADR). Mentored by **DR. DEEPAK SAXENA**, associate professor of basic science and craniofacial biology, Ms. Grodman was recognized at the 47th Annual Meeting & Exhibition of the AADR for her poster titled "Effect of Probiotics on Type 2 Diabetes and Glucose Tolerance."



DR. JOSEPH B. GUTTENPLAN, professor of basic science and craniofacial biology, on coauthoring an article titled "Effects of Black Raspberry Extract and Berry Compounds on Repair of DNA Damage and Mutagenesis Induced by Chemical and Physical Agents in Human Oral Leukoplakia and Rat Oral Fibroblasts" for *Chemical Research in Toxicology*. Dr. Guttenplan's coauthors included **MS. WIESLAWA KOSINSKA**, assistant research scientist in the Department of Basic Science and Craniofacial Biology.



DR. BABAK HAMIDI, clinical assistant professor of periodontology and implant dentistry, on receiving an AAP Foundation Institute for Teaching & Learning in the Health Professions Fellowship.



DR. LEILA JAHANGIRI, Ira E. Klein Professor and chair of the Department of Prosthodontics, on being appointed a council member of the Greater New York Academy of Prosthodontics.



MS. ROSEMARY HAYS, clinical associate professor of dental hygiene, on coauthoring an article titled "Assessment for Need of a Master's in Dental Hygiene Program" for *Access*. Professor Hays's coauthors included MS. **EVA M. LUPOVICI**, adjunct clinical professor of dental hygiene; **MS. KELLIE R. KENNEDY**, clinical assistant professor of dental hygiene; **MS. LISA STEFANO**, clinical associate professor of dental hygiene; and **MS. ANDREA BEALL**, adjunct clinical assistant professor of dental hygiene.



DR. ZIAD JALBOUT, adjunct clinical associate professor of cariology and comprehensive care, on presenting "Sequencing the Treatment in Implant Dentistry: When to Combine and When to Delay Procedures for Best Long-term Clinical Outcome" at the ICOI World Congress XXXV.



DR. RONALDO HIRATA, clinical assistant professor of biomaterials, on authoring a book titled "Shortcuts in Esthetic Dentistry," and on coauthoring an article titled "Effect of Sonic Resin Composite Delivery on Void Formation Assessed by Micro-computed Tomography" for *Operative Dentistry*. Dr. Hirata's coauthors included **DR. MALVIN N. JANAL**, senior research scientist and adjunct associate professor in the Department of Epidemiology & Health Promotion, and **DR. PAULO G. COELHO**, Leonard I. Linkow Professor of Biomaterials.



DR. BHARAT JOSHI, clinical associate professor of prosthodontics, on being named to the 2018 Board of Governors of the NYSDA Ninth District Dental Society, and on being appointed vice chair of the Member Benefits Committee and co-vice chair of the Professional Education committee of the Ninth District Dental Society.



DR. MAGED F. ISKAROS, clinical instructor in cariology and comprehensive care, on coauthoring an article titled "Does B-tricalcium Phosphate Work as a Bone Regenerative Material?" for *Dentista y Paciente*. Dr. Iskaros' coauthors included **DR. JOEL SILVER**, clinical associate professor of cariology and comprehensive care; **DR. JEFFREY S. BLYE**, clinical assistant professor of cariology and comprehensive care; and **DR. MARIA P. RODRIGUEZ CARDENAS**, clinical assistant professor of cariology and comprehensive care.



DR. MARINA DA ROSA KAIZER, assistant research scientist in the Department of Biomaterials, on coauthoring an article titled "Speed Sintering Translucent Zirconia for Chairside One-visit Dental Restorations: Optical, Mechanical, and Wear Characteristics" for *Ceramics International*. Dr. Kaizer's coauthors included **DR. YU ZHANG**, associate professor of biomaterials.

MS. MARIA JIMENEZ on being appointed a patient service representative.

MR. JOSHUA JOHNSON, adjunct instructor in the Department of Basic Science and Craniofacial Biology and administrator for the department's anatomical teaching collection, on coauthoring a technical report titled "Rehabilitation of Plastinated Anatomical Prosecutions Using Silicone Adhesive and Pre-cured S10/S3-impregnated Fascia and Muscle" for the *Journal of Plastination*. Dr. Johnson's coauthor was **MR. ERIC BAKER**, clinical associate professor and associate chair of the Department of Basic Science and Craniofacial Biology.

DR. JAMES M. KAIM, adjunct clinical professor of cariology and comprehensive care, on chairing the 2-17 Northeast Region CODE and Caries Management by Risk Assessment (CAMBRA) meetings.



DR. RALPH V. KATZ,

professor of epidemiology & health promotion, on receiving an honorary degree at the 192nd Trinity College Commencement on May 20, 2018. Dr. Katz graduated from Trinity College with a BS in biology.



DR. ISMAEL KHOULY,

clinical assistant professor of oral and maxillofacial surgery and associate director of periodontology and implant dentistry at the Bluestone Center for Clinical Research, on presenting a keynote lecture titled "Subcrestal Implant Placement: The New Paradigm in Implant Dentistry" at CONAOD XXII, the International Dental Congress of the Dominican Odontological Association.



DR. JAMES R. KEENAN,

clinical assistant professor of oral and maxillofacial pathology, radiology and medicine, on receiving the 2018 Lifelong Learning and Service Recognition (LLSR) Award presented by the Academy of General Dentistry (AGD), and on being appointed a member of the Board of Directors of the Academy of General Dentistry Foundation, a trustee of the New York Academy of General Dentistry (NYSAGD), and chair of the NYSAGD Dental Education Committee.



DR. RONALD KOSINSKI,

clinical assistant professor of pediatric dentistry, on being appointed clinical director of the new NYU Dentistry Oral Health Center for People with Disabilities.



DR. ALEXANDER ROSS KERR,

clinical professor of oral and maxillofacial pathology, radiology and medicine, on coauthoring a cover story for the *Journal of the American Dental Association (JADA)* titled "Evidence-based Clinical Practice Guideline for the Evaluation of Potentially Malignant Disorders in the Oral Cavity: A Report of the American Dental Association."



DR. WAYNE KYE,

clinical associate professor of periodontology and implant dentistry, on being appointed editor emeritus of the *Northeastern Society of Periodontists Bulletin*, and on being elected vice chair of the New York State Board of Dentistry.



DR. EDMUND KHOO,

clinical assistant professor of orthodontics, on receiving the ADEA/ADEA Council of Students, Residents and Fellows/Colgate-Palmolive Co. Junior Faculty Award, which recognizes outstanding junior faculty who demonstrate excellence in teaching, research, and service and a commitment to dental education, and on presenting "Barriers Pursuing Academia After Graduation: How Can We Help?" at the Society of Orthodontic Educators Symposium, part of the American Association of Orthodontists (AAO) 118th Annual Session in Washington, DC.



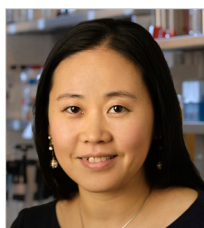
DR. YON H. LAI,

adjunct clinical professor of orthodontics, on being elected president of the New York State Society of Orthodontists (NYSSO), and on heading the Match Grant Program of the American Association of Orthodontists Political Action Committee (AAOPAC).



DR. ELLEN LEE,

clinical assistant professor of cariology and comprehensive care, on being appointed to the editorial board of *Dental Research: An International Journal (DRIJ)*.



DR. XIN LI,

associate professor of basic science and craniofacial biology, on being appointed a member of the Musculoskeletal, Oral and Skin Sciences (MOSS) Special Emphasis Panel at the NIH Center for Scientific Review; an American Society for Bone and Mineral Research (ASBMR) representative to the Federation of American Societies for Experimental Biology (FASEB) Shared Research Committee; a member of the AADR Constitution Committee; and a member of the AADR and IADR Fellowship Committees. Added kudos to Dr. Li on being appointed a reviewer for the AADR/CADR Joseph Lister Award for New Investigators, the IADR STAR Network Academy Fellowship, the IADR Toshio Nakao Fellowship, the AADR Student Research Fellowships, the AADR Anne D. Haffajee Fellowship, and the AADR William B. Clark Fellowship.



DR. LOUIS M. LIN,

professor of endodontics, on being appointed to the editorial board of the *International Journal of Dental Research* and a member of the Scientific Advisory Board of the *Journal of Endodontics*.



DR. MITCHELL J. LIPP,

clinical professor of orthodontics, on being appointed a member of the ADA Commission on Continuing Education Provider Recognition (CCEPR).



DR. YIHONG LI,

professor of basic science and craniofacial biology, on being nominated for the March-madness inspired biomedical research competition STAT Madness 2018.



DR. ZHONGBO LIU,

assistant research scientist in the Department of Basic Science and Craniofacial Biology, on coauthoring an article titled "Growth Hormone Control of Hepatic Lipid Metabolism" for *Diabetes*, the peer-reviewed journal of the American Diabetes Association. Dr. Liu's coauthors included **DR. SHOSHANA YAKAR**, associate professor of basic science and craniofacial biology.



MS. LILY LIANG

on being promoted to lead patient service representative for the Ashman Department of Periodontology & Implant Dentistry.



MS. ASHLEY LIU

on being promoted to dental insurance analyst.



DR. HOWARD I.A. LIEB,

adjunct clinical associate professor of cariology and comprehensive care, on being appointed a trustee of the NYSDA Second District Dental Society; an associate editor of the *Second District Dental Society Bulletin*; and a member of the advisory committee for the 2018 Greater New York Dental Meeting.



DR. PETER M. LOOMER,

clinical professor and chair of the Ashman Department of Periodontology and Implant Dentistry, on presenting the keynote addresses at the 2nd International Conference on Aesthetic Dentistry, ICAD2017, at NYU Abu Dhabi's 4th annual Public Health Think Tank and a lecture on "Oral Hygiene and Your Overall Heart Health" as part of the Heart Health Lecture Series sponsored by NYU Langone Health Center for the Prevention of Cardiovascular Disease; on serving as associate editor of the oral microbiology section of *BioMed Central Oral Health*; on authoring an article titled "Microbial Biofilms: Knowledge Advances As Technology Moves Forward" for *Diamond*, the magazine of the Temple University Maurice H. Kornberg School of Dentistry; and on coauthoring a paper titled "A Spatial Gradient of Bacterial Diversity in the Human Oral Cavity Shaped by Salivary Flow" for *Nature Communications*.



DR. RONALD I. MAITLAND,
adjunct clinical associate professor of cariology and comprehensive care, on being appointed to the editorial advisory board of the *Journal of Esthetic and Restorative Dentistry*.



DR. JOHN T. MCDEVITT,
professor and chair of biomaterials, on being appointed to the editorial board of *Dental Research: An International Journal (DRIJ)*.



DR. WILLIAM J. MALONEY,
clinical associate professor of cariology and comprehensive care, on presenting an award-winning table clinic titled "The Resurgence of the Use of Heroin and the Role of the Dentist in the Opioid Crisis" at the 106th Thomas P. Hinman Dental Meeting; on authoring "The Oral and Dental Significance of Treacher-Collins Syndrome" and "The Role of Endogenous Opioids in Pain Management in the Human Body," both for *Dentista y Paciente*; "Dr. Amos Westcott: Inventor, Businessman, Politician, and First President of the New York State Dental Association" for the *NYSDA News*; "Subcutaneous Air Emphysema in Dentistry," for *Biomedical Journal of Science and Technical Research*; on coauthoring two books: "Rounding Third and Headed for Home" and "Safari: Looking into the Eye of the Leopard"; on being appointed editor-in-chief of the *Journal of Dentistry and Orofacial Surgery*; and a member of the editorial board of *Dental Research: An International Journal (DRIJ)*; on being elected to fellowship in the New York Academy of Medicine; and on coauthoring an article titled "An Analysis of the Near-fatal Wound Suffered by Benedict Arnold at Saratoga" for *Friends of Saratoga Battlefield*.



MS. SHARON MCLAUGHLIN,
clinical instructor in dental hygiene, on authoring a guest editorial titled "The Value of Long-term Employees to Institutions" for *Access*.



DR. MARJAN MOGHADAM,
clinical associate professor of prosthodontics, on receiving Honorable Mention as a nominee for the 2018 NYU Distinguished Teaching Award.



MR. MICHAEL MAZZONE
on being appointed a senior IT specialist for Technology and Informatics Services (TIS).



DR. FREDERICK G. MORE,
professor emeritus of epidemiology & health promotion and of pediatric dentistry, on being elected president-elect of the American Society for Dental Ethics and on being appointed executive director of the Society.



MS. NICOLE MORGAN
on being appointed a patient service representative for the Ashman Department of Periodontology and Implant Dentistry.

MS. ISAMAR LUGO on being appointed a supply assistant for the Linhart Continuing Dental Education Program.



DR. ELLIOTT MOSKOWITZ, adjunct clinical professor of orthodontics, on authoring a guest editorial titled "Commentary: Air-rotor Stripping - John J. Sheridan, DDS, January 1985" for the 50th anniversary issue of the *Journal of Clinical Orthodontics*, and on being appointed a contributing editor of the Journal.



DR. KAY T. OEN, clinical assistant professor of cariology and comprehensive care, on being appointed co-chair of the NYSAGD Empire State Master's Program.



DR. AMR M. MOURSI, professor and chair of the Department of Pediatric Dentistry, on becoming a permanent host of "The Dental Health Show" on Sirius XM.



DR. NICOLA C. PARTRIDGE, professor and former chair of the Department of Basic Science and Craniofacial Biology, on coauthoring an article titled "The Deletion of Hdac4 in Mouse Osteoblasts Influences Both Catabolic and Anabolic Effects in Bone" for the *Journal of Bone and Mineral Research (JBMR)*. Dr. Partridge's coauthors included **DR. TERUYO NAKATANI**, adjunct assistant professor of basic science and craniofacial biology, and **MR. JOSHUA JOHN-SON**, adjunct instructor in the Department of Basic Science and Craniofacial Biology and administrator for the department's anatomical teaching collection. Added kudos to Dr. Partridge on coauthoring "Pulsed Electromagnetic Fields Inhibit Human Osteoclast Formation and Gene Expression via Osteoblasts" for the journal *Bone*. Dr. Partridge's coauthors included **MR. ZHIMING HE**, associate research scientist in the Department of Basic Science and Craniofacial Biology, and **DR. JOHANNA WARSHAW**, clinical assistant professor of basic science and craniofacial biology.



DR. ASMA MUZAFFAR, adjunct clinical assistant professor of cariology and comprehensive care, on being appointed to the editorial board of *Modern Research in Dentistry*.



DR. RICHARD NIEDERMAN, professor and chair of the Department of Epidemiology & Health Promotion, on coauthoring "Preventable Tooth Loss in Hawaii: The Role of Socioeconomic Status, Diabetes, and Dental Visits" for *Preventing Chronic Disease*; on presenting a lecture titled "Evidence-based Primary and Secondary Caries Prevention" at the 2017 Gathering for Pacific Islander Health; on participating in a symposium titled "Policy, Population, and Patient Levers for Improving Life Span Oral Health Equity" at the 11th IADR World Congress on Preventive Dentistry; and on coauthoring "Getting the Incentives Right: Improving Oral Health Equity with Universal School-based Caries Prevention" for the *American Journal of Public Health*. Dr. Niederman's coauthors included **DR. SHULAMITE S. HUANG**, research instructor in the Department of Epidemiology & Health Promotion.



DR. CHERYLINE PEZZULLO, clinical instructor in the Department of Cariology and Comprehensive Care, on receiving the 2018 American Dental Education Association/Academy for Academic Leadership (ADEA/AAL) Faculty of Color Tuition Scholarship for Professional Development presented by the ADEA Summer Program for Emerging Academic Leaders.

MS. JOANNA MONIKA NIMANI on being appointed a dental assistant in the Department of Prosthodontics.

DR. RICHARD L. OSHRAIN, adjunct clinical instructor of oral and maxillofacial surgery, on being appointed a trustee of the NYSDA Second District Dental Society.

DR. ADY PALT, adjunct clinical professor of periodontology and implant dentistry, on presenting "Minimally Invasive Concept with PIEZO Surgery for Narrow Ridge Cases: A New Concept with NRI (Narrow Ridge Implants)" at the ICOI World Congress XXXV.



MR. STEVEN PIGLIACELLI, adjunct instructor in the Department of Prosthodontics, on authoring an article titled "Price, Quality, and Volume" for *Dental Economics*.



DR. SEUNG-HEE RHEE, adjunct clinical associate professor of cariology and comprehensive care, on being appointed a trustee of the New York State Academy of General Dentistry (NYSAGD), and on being appointed chair of the NYSAGD New Dentist Committee.



DR. VICTORIA H. RAVEIS, research professor in the Department of Cariology and Comprehensive Care and co-director of the NYU Aging Incubator, on serving on a panel titled "Being and Aging" at NYU's 4th Annual Ethics, Compliance, and Risk Symposium: "Intersections on the Road to Equity, Diversity and Inclusion"; and on coauthoring "Understanding Barriers and Facilitators to Breast and Cervical Cancer Screening Among Muslim Women in New York City: Perspectives from Key Informants" for the *SM Journal of Community Medicine*, "Applying a Qualitative Approach to Examine the Implementation of Mandatory Health Practice Change within Health-care Institutions" for *SAGE Research Methods Cases*, and "Relationships Among Self-perception of Aging, Physical Functioning and Self-efficacy in Late Life" for the *Journals of Gerontology - Series B, Psychological Sciences and Social Sciences*. Added kudos to Dr. Raveis on co-presenting two abstracts, "Older Adults with Advanced HIV/AIDS and their Informal Caregivers' Communication on End-of-life Care" and "The Longitudinal Relationship between the Will to Live and Depression in Late Life," at the 21st IAGG World Congress of Gerontology and Geriatrics; and on co-presenting an abstract titled "Development of a Generalist Curriculum to Integrate the Palliative Approach Early in Chronic Disease Management: Results from the CASA Study in an HIV Population" at the 15th World Congress of the European Association for Palliative Care. Dr. Raveis's co-presenters included **DR. MONIQUE CARRERO-TAGLE**, associate research scientist in the Department of Cariology and Comprehensive Care, and **DR. DANIEL G. KARUS**, senior research scientist in the Department of Cariology and Comprehensive Care.



DR. JOHN L. RICCI, associate professor of biomaterials and director of the master's program in biomaterials, on receiving the 2018 Technology Innovation and Development Award presented by the Society For Biomaterials for his work in developing the Laser-Lok® surface for BioHorizons implants.



DR. MARIA P. RODRIGUEZ CARDENAS, clinical assistant professor of cariology and comprehensive care, on coauthoring an article titled "Beyond Digital Margins: Helping Students Develop Visual and Thinking Skills with CAD/CAM" for the *International Journal of Dentistry and Oral Health*. Dr. Rodriguez Cardenas's coauthors included **DR. MARIE A. CONGIUSTA**, clinical instructor in cariology and comprehensive care and group practice director; **DR. DAVID H. HERSHKOWITZ**, clinical associate professor and associate chair of the Department of Cariology and Comprehensive Care; and **DR. DENISE ESTAFAN**, associate professor of cariology and comprehensive care. Added kudos to Dr. Rodriguez Cardenas on co-presenting a new ideas session titled "Electronic Health Records Framework in Interprofessional Education and Practice," and a poster session titled "Benefits of Peer Assessment in Dental Education and Professional Practice," at the 2018 ADEA Annual Session & Exhibition. Dr. Rodriguez Cardenas' co-presenters included **DR. ESTAFAN**, **DR. KENNETH L. ALLEN**, clinical associate professor and associate chair of the Department of Cariology and Comprehensive Care; **DR. ANGELA M. DE BARTOLO**, clinical assistant professor of cariology and comprehensive care and group practice director; and **DR. LUCRETIA DEPAOLA-CEFOLA**, clinical instructor in cariology and comprehensive care and group practice director.



DR. PAUL A. ROSENBERG,
professor of endodontics, on being appointed a member of the Scientific Advisory Board for the *Journal of Endodontics*.



MS. KATHRYN ROTHAS, '19,
on being appointed to the 2018–2019 American Students Dental Association (ASDA) National Leadership Board as a council on membership associate.



DR. RAID SADDA,
on coauthoring a book chapter titled “Treatment of Maxillofacial Gunshot Wound Injuries” for *Oral and Maxillofacial Surgery*, 3rd Edition, Volume 2, and on receiving a certificate of recognition for his service from St. Barnabas Hospital.



DR. JEAN-PIERRE N. SAINT-JEANNET,
professor of basic science and craniofacial biology, on being appointed a member of the National Science Foundation (NSF) pre-proposal study section on animal development.



DR. DEEPAK SAXENA,
associate professor of basic science and craniofacial biology, on being selected by the NIH-NIDCR to serve on two MOSS Integrated Review Groups – “Dental Microbiology and Oral Biology” and “Small Business Special Emphasis Panel: Orthopedic, Skeletal Muscle and Oral Sciences”; on being appointed a member of the Oral, Dental and Craniofacial Sciences (ODCS) Study Section of the NIH-NIDCR Center for Scientific Review; and a member of the International Grant Review Panel of the Swiss Cancer League; and on being invited to serve on the Oral Health Effects of Tobacco Products, Science and Regulatory Policy, Steering Committee of the AADR.



DR. ANDREW B. SCHENKEL,
clinical associate professor of cariology and comprehensive care, on being inducted as a fellow of the New York Academy of Medicine, and on coauthoring an article titled “You Get Beautiful Teeth Down There: Racial/Ethnic Minority Older Adults’ Perspectives on Care at Dental School Clinics” for the *Journal of Dental Education*. Additional coauthors included **MS. SHIRLEY BIRENZ**, clinical assistant professor of dental hygiene; and **DR. SARA S. METCALF**, associate professor of epidemiology and health promotion.



DR. BRIAN L. SCHMIDT,
professor of oral and maxillofacial surgery and director of the Bluestone Center for Clinical Research and the NYU Oral Cancer Center, on being appointed a member of the Somatosensory and Chemosensory Systems (SCS) Study Section of the NIH Center for Scientific Review. Added kudos to Dr. Schmidt on receiving the 2018 Oral and Maxillofacial Surgery (OMS) Foundation Research Recognition Award for outstanding contributions to the specialty, and on presenting “The Role of Epigenetic Silencing of OPRM1 in Opioid Tolerance in Cancer Patient Populations” at the 13th Annual NIH Pain Consortium Symposium.



DR. GAIL E. SCHUPAK,
adjunct clinical assistant professor of orthodontics, on co-chairing the Seminars and Workshops committee of the 2017 Greater New York Dental Meeting, and on being elected international secretary of the Alpha Omega (AO) International Dental Fraternity.

MS. JOBECKY RUIZ on being appointed a patient service representative in the Dental Faculty Practices.



MS. DIANNE L. SEFO, clinical instructor in dental hygiene, on coauthoring an article titled "Multimedia Technologies Used in Pre-clinical Dental Hygiene" for *Access*. Professor Sefo's coauthors included **MS. SHIRLEY BIRENZ**, clinical assistant professor of dental hygiene, and **MS. SARAH KANG**, clinical instructor in dental hygiene.



DR. DONNA SHELLEY, adjunct associate professor of cariology and comprehensive care, on editing a joint issue of *Frontiers in Public Health* and *Frontiers in Medicine* on the topic of "Methods and Applications in Implementation Science."



DR. STUART L. SEGELNICK, adjunct clinical professor of periodontology and implant dentistry, on being appointed editor-in-chief of both the *Northeastern Society of Periodontists (NESP) Bulletin* and the *Second District Dental Society Bulletin*, and on being appointed a trustee of the NYSDA Second District Dental Society.



DR. ASGEIR SIGURDSSON, Presley Elmer Ellsworth Professor of Endodontics and chair of the Dr. I.N. and Sally Quartararo Department of Endodontics, on being appointed a member of the Scientific Advisory Board of the *Journal of Endodontics*, and on presenting a keynote address titled "Contemporary Approach to Root Canal Instrumentation: Biology, Technology and Problem-solving," at the VI Encontro da Sociedade de Endodontia Latino Americana (SELA).



DR. SONAL S. SHAH, clinical assistant professor of oral and maxillofacial pathology, radiology and medicine, on being appointed a Commission on Dental Accreditation (CODA) Site Visitor.



DR. DESPINA SITARA, associate professor of basic science and craniofacial biology, on receiving a 2017 NIH Travel Award for her poster titled "Inhibition of FGF-23 Signaling Rescues Renal Anemia."

DR. SAMEET S. SHETH, adjunct clinical assistant professor of prosthodontics, on being appointed secretary of the New York Section of the American College of Prosthodontists.

MS. MONIKA SILGUERO on being appointed a dental radiographer.

MR. TITUS SON, '20, on being designated a student research fellow by the AADR. Mr. Son, mentored by **DR. YU ZHANG**, associate professor of biomaterials, was recognized at the 47th Annual Meeting & Exhibition of the AADR for his poster titled "A Simplified Pre-cracking Method for Fracture Toughness Determination."



DR. LESLIE F. SMITHEY, assistant dean for quality assurance and risk management and adjunct assistant professor of epidemiology & health promotion, on becoming a fellow of the ADEA Leadership Institute Class of 2019.



DR. ASHOK SONI, associate professor of prosthodontics, on being appointed chair of the Professional Education Committee of the NYSDA Ninth District Dental Society.



DR. ANDREW I. SPIELMAN, professor and interim chair of the Department of Basic Science and Craniofacial Biology, on coauthoring an article titled "12-year Use of a Digital Reference Library (VitalBook) at a US Dental School: Students' and Alumni Perceptions" for the *Journal of Dental Education*. Dr. Spielman's coauthors included **MS. ELIZABETH MAAS, '19**; and **DR. ELISE EISENBERG**, senior director of informatics and adjunct clinical professor of epidemiology & health promotion; and on coauthoring "Person-centered Care: Opportunities and Challenges for Academic Dental Institutions and Programs" for the *Journal of Dental Education*, and "Dental, Dental Hygiene, and Advanced Dental Students' Use, Knowledge, and Beliefs Regarding Tobacco Products" for the *Journal of Dental Education*. Dr. Spielman's coauthors on the latter article included **DR. ERIC CHENG, '18**, and **DR. RIZVAN MOOSVI, '18**.



DR. ANALIA VEITZ-KEENAN, clinical professor of oral and maxillofacial pathology, radiology and medicine, and director of evidence-based dentistry in the Department of Epidemiology & Health Promotion, on being appointed a councilor by the IADR Evidence-based Dentistry Network.



DR. CRISTIAN STEFAN, clinical professor of basic science and craniofacial biology, on being appointed to membership on the Anatomical Education Committee of the International Federation of Associations of Anatomists.



DR. DENISE A. TROCHESSET, clinical professor and chair of the Department of Oral and Maxillofacial Pathology, Radiology and Medicine, on being appointed a member of the appeal board of the ADA Commission for Continuing Education Provider Recognition (CCEPR).



DR. FARHAD VAHIDI, associate professor of prosthodontics, on being appointed to the editorial board of *Dental Research: An International Journal (DRIJ)*.

MR. JEREMY R. SPORN on being appointed an audio visual technician for Technology and Informatics Services (TIS).

DR. JEANINE STABULAS-SAVAGE, clinical assistant professor of oral and maxillofacial pathology, radiology and medicine, on editing the 10th edition of *Frommer's Radiology for the Dental Professional*.

MS. MERCY SWARNA on being appointed a patient service representative in the Dental Faculty Practices.

MS. PATRICIA VARGAS, department administrator for the Department of Orthodontics, on receiving an MS degree in management and technology from the NYU Tandon School of Engineering.

MS. STACI A. VIOLANTE, adjunct clinical instructor in dental hygiene, on authoring "The Third Molar Extraction Conundrum" for *Dimensions of Dental Hygiene*; "It's All in the Gloves: Developing a Dental Office Protocol for Latex Reactions" for *Dentistry IQ*; and two articles titled "Exploring the Grant-writing Process: Perseverance with the Details Increase the Odds of Being Awarded a Grant" and "Dammed If You Do, Dammed If You Don't: How A Rubber Dam During Dental Procedures Improves Treatment and Quality of Care," both for *RDH Magazine*.

DR. SAYAMOL VORARAGSA, adjunct clinical instructor in the Department of Cariology and Comprehensive Care, on coauthoring an article titled "Conservative Management of Dental Caries Using Silver Nitrate and Atraumatic Restorative Treatment in Remote Rural Setting: A Reduction to Practice" for the *New York State Dental Journal*. Dr. Voraragsa's coauthors included **DR. RALPH P. CUNNINGHAM**, clinical associate professor of cariology and comprehensive care.



DR. ROGER N. WARREN, adjunct clinical associate professor of periodontology and implant dentistry, on being selected by the American Board of Periodontology to serve as a Board Examiner.



DR. YU ZHANG, associate professor of biomaterials, on receiving a 2017 AADR Fellowship and on being elected president-elect of the IADR Dental Materials Group.



DR. COLLEEN A. WATSON, clinical instructor in the Department of Cariology and Comprehensive Care and group practice director, on coauthoring an article titled "Stress Relief Through Ergonomics for Dental Professionals," for the *New York State Dental Journal*. Dr. Watson's coauthor was **DR. ANUPAMA SANGADALA**, '17.



DR. LUKASZ WITEK, assistant professor in the Department of Biomaterials, on coauthoring an article titled "The Technique for 3D Printing Patient-specific Models for Auricular Reconstruction" for the *Journal of Cranio-maxillo-facial Surgery*. Dr. Witek's coauthors included **MS. HANNAH LISS**, '20; **MR. SAMUEL RAFFAELLI**, '19; **MS. AIZA HUMAYUN**, '20; and **DR. PAULO G. COELHO**, Leonard I. Linkow Professor of Biomaterials.

DR. MEA A. WEINBERG, clinical professor of periodontology and implant dentistry, on coauthoring an article titled "Abuse Potential of Gabapentin in Dentistry" for *General Dentistry*, and "The Furcation Defect Dilemma: Multidisciplinary Approach to Diagnosis and Treatment" for the *New York State Dental Journal*. Dr. Weinberg's coauthors included **DR. STUART L. SEGELNICK**, adjunct clinical professor of periodontology and implant dentistry, **DR. ASGEIR SIGURDSSON**, Dr. Presley Elmer Ellsworth Professor of Endodontics and chair of the Dr. I.N. and Sally Quartararo Department of Endodontics, and **DR. JOSEPH ZELIG**, DDS '02, Advanced Education Program in Periodontics '05, and Advanced Education Program in Endodontics '17.

GOLDEN CIRCLE REUNION: Celebrating the Classes of '68 and earlier

May 23, 2018



View photo galleries from all alumni events at dental.nyu.edu/alumni.

REUNION '18: Celebrating the Classes of '08, '03, '98, '93, '88, '83, '78, '73

June 9, 2018



Dr. Nawras Najor, '17: Doing “The Right Thing”

A 22-year old Wyandotte, Michigan, mom was in desperate need of dental care. Her life had been difficult and she had not received the care she sorely needed. As a result, her teeth were literally rotting away. And after seeing six dentists who all told her the same thing — that all her teeth needed to be replaced with dentures because her insurance wouldn't cover the necessary restorative care — she was very discouraged.

The new mom, Kelsee Williams, was used to hiding her smile and not going out. She didn't even like to laugh in public. “I would never smile or show my teeth,” she said.

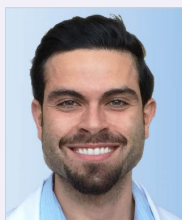
She was ready to give up when she stopped in to see one more local dentist, Dr. Nawras Najor, Class of 2017. “We looked at all the numbers, which amounted to a \$50,000 treatment plan,” says Dr. Najor. “And I said, ‘I don't care.’” Dr. Najor decided not to do what the insurance plan recommended, but “to do the right thing.”

Instead of removing her teeth, Dr. Najor and his team saved them all.

Today, thanks to Dr. Najor and his office's “Amazing Smile Program” — which selects one patient each month with major dental needs to receive the grand prize of a free, personalized smile makeover — Ms. Williams has a great smile and restored confidence.

The story was covered by the local Fox 2 station in Detroit, Michigan.

Dr. Scott Podell, Group Practice Director and clinical assistant professor in the Department of Cariology and Comprehensive Care, said of his former student: “Nawras was a joy to teach and mentor. He was a gifted student clinician who graciously shared his time and expertise with his classmates. I am not surprised that his giving nature is reflected in his approach to patient care. I couldn't be prouder of him and the example that he is setting.”



NYU Alumni Changemakers of the Year: Building a Better World

In 2018, New York University introduced the inaugural class of NYU Alumni Changemakers — a select group of NYU alumni whose accomplishments help build a better world.

Chosen by the NYU Alumni Association Board from crowdsourced nominations, these alumni are the best of the best: entrepreneurs and visionaries who save lives, reduce suffering, and bring hope to the marginalized.

Two College of Dentistry graduates are among the group of only 10 alumni University-wide who were chosen for the inaugural class.



Jean Paul Laurent, a 2013 graduate of the BS Program in Dental Hygiene, is Founder & CEO of Unspoken Smiles Foundation.

“It was tragedy that led me to activism,” says Jean Paul. Originally from Haiti, Jean Paul was studying at NYU when his homeland was rocked by a devastating earthquake. After seeing the damage firsthand, the idea of simply pursuing a career in dental hygiene gave way to a powerful urge to help.

That's how the Unspoken Smiles Foundation was born. Dedicated to fighting tooth decay — originally in Haiti and now around the world — Unspoken Smiles brings dental supplies, volunteer dentists, and dental hygiene education to some of the world's most underserved communities. But it's more than dental hygiene. The real targets of Unspoken Smiles are systemic poverty, disease, and lack of access to healthcare. The growing foundation has racked up awards and accolades and served more than 6,000 children in seven countries.

Jean Paul plans to scale larger, increase staff, and develop partnerships with major international organizations. Already he has established a fellowship program that trains young women to provide oral care in their own urban communities. The goal: more smiles and less suffering for marginalized people everywhere. “Tragedy changed me,” Jean Paul says, “and now I'm changing the world.”



Eduardo D. Rodriguez, a 1992 graduate of the DDS program, currently serves as Helen L. Kimmel Professor of Reconstructive Plastic Surgery and

chair of the Hansjörg Wyss Department of Plastic Surgery at the NYU School of Medicine. A celebrated trauma surgeon at NYU Langone, his work has given hope to thousands of people with disfiguring injuries. Even more astounding, he has become one of the world's foremost experts in facial transplantation surgery.

“I thought I would get my degree in dentistry, go home to Florida, and practice,” he says. “But I was pushed throughout my career by people who saw more in me than I saw in myself.” That's how he ended up pursuing a medical degree, and ultimately developing a specialty in microsurgery. But his real watershed moment came while treating soldiers returning from Iraq and Afghanistan with severe disfigurements. “I wanted to know how to solve the problems I was seeing.”

Dr. Rodriguez's first face transplant operation took 36 hours; his second took 24; and his third, 25 hours. All three patients have made remarkable recoveries and are experiencing second lives. These are paradigm-shifting surgeries that Dr. Rodriguez compares to the moonshot. “I wanted to do something big,” he says. “And I believe I am practicing the most sacred profession on earth.”

Alumni in the Spotlight

'50s

DR. STANLEY ANTONOFF, Class of 1957, on publishing his 5th book, *Another 365 Plus One*, a collection of humorous stories.

'70s

DR. GREG BELOK, Class of 1971, on being featured in a January 2018 *ADA News* article, "Become a 'Lifelong Learner,'" on the benefits of participation in an evidence-based dentistry workshop.

DR. STEPHEN COLEN, Class of 1971, on being appointed to the board of the Gift of Life Marrow Registry.

DR. STEPHEN I. HUDIS, DDS '79; Advanced Education Program in Prosthodontics '82, on being elected vice president of the American College of Prosthodontists.

'80s

DR. NOEL BROWN, Class of 1988, on coauthoring "Conservative Management of Dental Caries Using Silver Nitrate and Atraumatic Restorative Treatment in Remote Rural Setting: A Reduction to Practice" for the *New York State Dental Journal*.

DR. GERALD P. CURATOLA, Class of 1983, on authoring *The Mouth-Body Connection: The 28-Day Program to Create a Healthy Mouth, Reduce Inflammation, and Prevent Disease Throughout the Body*.

DR. MOJGAN FAJIRAM, Class of 1989, on winning a 2018 Tony Award as a producer of "Once Upon This Island."

'00s

DR. MARCUS JOHNSON, Class of 2008, on being interviewed by the American Dental Association (ADA) for the *New Dentist Now* blog post titled "New York Dentists Show Value of Mentorship." Dr. Johnson was also featured in an ADA member spotlight video on mentorship.

DR. SAKO H. KARAKOZIAN, Class of 2007, on being appointed an advisor to the TV program *The Doctors* after appearing in several oral health segments, including "Three Surprising Secrets to A Better Smile."

DR. LIOUDMILA NIKIFOROUK, Class of 2003, on authoring a guest editorial for the *Pocono Record* titled "Ask the Doctor: Prepare Your Child for Their First Trip to the Dentist."

DR. FERNANDO TORDOYA, Class of 2005, on becoming a fellow of the American Academy of General Dentistry.

'10s

DR. AMANDA ANDRÉ, Class of 2018, on coauthoring an article titled "Quality of Life Among Dental Students: A Survey Study" for the *Journal of Dental Education*. Dr. André's coauthors included **DR. MAUREEN MCANDREW**, Class of 1984, clinical professor of cariology and comprehensive care.

DR. JOÃO MALTA BARBOSA, Jonathan and Maxine Ferencz Advanced Education Program in Prosthodontics Class of 2017, on coauthoring "Thickness Evaluation of Articulating Papers and Foils" for the *Journal of Esthetic and Restorative Dentistry*. Dr. Barbosa's coauthors included **DR. RONALDO HIRATA**, clinical assistant professor of biomaterials.

DR. GIUSEPPE CICERO, Jonathan and Maxine Ferencz Advanced Education Program in Prosthodontics, Class of 2017, was selected by *Forbes* to appear in the third annual issue of "30 Under 30 Europe," a list featuring 300 young entrepreneurs across 34 European countries.

DR. EDLY DESTINE, Class of 2013, on being interviewed by the American Dental Association (ADA) for the *New Dentist Now* blog post titled "New York Dentists Show Value of Mentorship."

DR. DR. DANIELLE LOMBARDI, DDS, 2014; Advanced Education Program in Pediatric Dentistry, 2016, on coauthoring a book titled *The Chronicle of Women in White Coats*, with 19 other female doctors across the country, all of whom were MDs, except for Dr. Lombardi.

DR. TATIYA UNGPHAKORN, Advanced Education Program in Orthodontics, Class of 2016, on receiving Honorable Mention in the 2018 Resident Case Display Program sponsored by the College of Diplomates of the American Board of Orthodontics at the AAO 118th Annual Session. Dr. Ungpakorn's faculty advisor was **DR. EDMUND KHOO**, clinical assistant professor of orthodontics.

IN REMEMBRANCE

Dr. Samuel Walter Askinas, Class of 1949

Dr. Saul Bahn, former associate professor of prosthodontics and of cariology and comprehensive care

Dr. Bruce R. Barnhard, Class of 1988, Advanced Education Program in Prosthodontics; adjunct clinical assistant professor of prosthodontics

Dr. Philip Frank Barone, Class of 1958

Dr. Sheldon L. Baumrind, Class of 1947

Dr. John D. Buonasera, Class of 1971

Dr. Stan B. Dawkins, Class of 1963; former associate professor of prosthodontics and of cariology and comprehensive care and former module director

Dr. Alvin Duberstein, Class of 1951

Dr. Robert E. Felsher, Class of 1952

Dr. Herbert Frommer, former professor of diagnostic science and urgent care, and director of radiology

Yana Grinberg, Class of 1992

Dr. Herbert N. Gross, Class of 1953; clinical professor of cariology & comprehensive care

Dr. Yale A. Hirshberg, Class of 1959

Dr. Stephen B. Kahn, Class of 1970

Dr. David L. Korris, Class of 1943; former clinical professor of cariology & comprehensive care

Dr. Harvey D. Levine, Class of 1945

Dr. Walter Palmer, Class of 1954

Dr. Joan A. Phelan, former professor and chair of the Department of Oral and Maxillofacial Pathology, Radiology and Medicine

Dr. I.N. (Nick) Quartararo, former clinical professor of endodontics

Dr. Alan Radack, Class of 1955

Dr. Michael V. Ragone, Class of 1977

Dr. Daniel Rudolph, Class of 1971

Dr. Morton Rosenbluth, Class of 1946

Dr. Donna J. Rumberger, Class of 1980

Dr. Sigmund S. Stahl, professor emeritus and former chair of the Department of Periodontics and former associate dean for academic affairs

Dr. Ira Taub, Class of 1960

Dr. George Whinston, Class of 1953, Advanced Education Program in Periodontics; clinical professor of periodontology & implant dentistry

Dr. Roy E. Ziff, Class of 1969

Dr. Ira Zinner, Class of 1963; clinical professor of prosthodontics

They Made a Difference

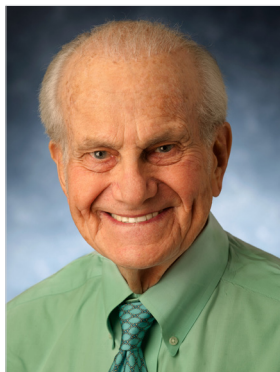


DR. JOAN A. PHELAN, professor emerita and former chair of the Department of Oral and Maxillofacial Pathology, Radiology and Medicine, passed away on January 21, 2018.

Joan joined the College of Dentistry in 1980 as an assistant professor in the Department of Oral Medicine, Pathobiology, and Oral Pathology, where she rose to the rank of associate professor. After a 10-year hiatus, from 1990 to 2000, she rejoined NYU Dentistry as professor and chair of the Department of Oral Pathology, which was later renamed the Department of Oral and Maxillofacial Pathology, Radiology and Medicine.

Throughout her nearly three decades of service to NYU, Joan applied her considerable scholarly and leadership skills to building what has become one of the most highly regarded departments of oral medicine in the nation. A major highlight of Joan's career occurred in 2006, when she was awarded NYU's highest teaching honor, the NYU Distinguished Teaching Award, in recognition of her mastery of the art of teaching and her commitment to her students.

The importance of the role that Joan played in dental education and the profession and in the lives of her students and colleagues at NYU cannot be overestimated. Her legacy will live on in the contributions she made and the lives she touched. ■



DR. BERT D. GASTER, associate professor of prosthodontics, passed away on May 11, 2017. He had recently celebrated his 90th birthday.

Bert, who received both his dental degree and his postgraduate training in prosthodontics at NYU, was a distinguished alumnus and a faculty member since 1974. A legendary educator, he brought unparalleled commitment to teaching generations of dentists to become competent, confident, successful professionals.

A gentle and nurturing person, he never tired of helping the students he loved and respected so deeply. All who knew him learned from him.

For more than 40 years, Bert Gaster played a pivotal role in the life of the College as a much admired teacher, respected colleague, and loyal alumnus. He will be deeply missed and remembered for his wonderful personality, charm, and commitment to his alma mater. ■

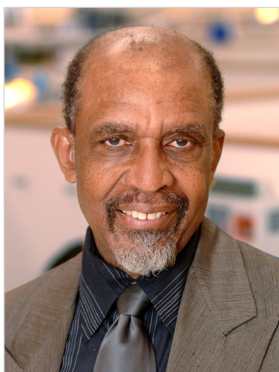


DR. HERBERT H. FROMMER, professor emeritus of oral and maxillofacial pathology, radiology and medicine, passed away on February 1, 2018. Dr. Frommer was a highly respected and beloved teacher at NYU for 40 years.

During his teaching career, Herb probably trained more dentists in radiology than anyone else in the country. His legendary impact as an educator was equaled only by his wisdom and compassion as a human being.

A recipient of NYU's prestigious Distinguished Teaching Award, the University's highest honor for teaching, Herb was the founding author of the classic text, *Frommer's Radiology for the Dental Professional*, now in its 10th edition. An exemplary citizen of the University, he served for many years as NYU Dentistry's representative to the University Senate.

In Herb Frommer, NYU dental students had an excellent role model, one who helped them to fulfill their potential both professionally and personally. He was always committed to excellence and was satisfied with nothing less from his students. He has left an indelible mark on the College. ■

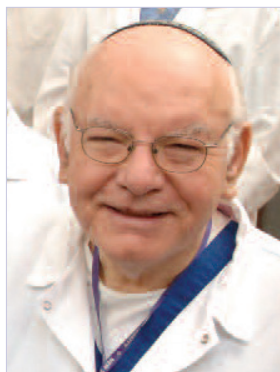


DR. STAN B. DAWKINS, a former associate professor of prosthodontics and of cariology and comprehensive care, group practice director, and director of the Advanced Education Program in General Dentistry, passed away on May 5, 2018.

Stan, who earned both his DDS degree and his specialty training certificate in prosthodontics at NYU, was an outstanding member of the faculty for more than 40 years, and was a distinguished and active alumnus. He was also a respected member of the University Senate and served on the all-University Tenure and Promotions Committee.

Beginning his career as an Olympic athlete and continuing throughout a distinguished career in dentistry and dental education, Stan was consistently committed to personal and professional excellence. Dental students must have excellent role models in order to develop properly and fulfill their potential both professionally and personally. Stan Dawkins was one such role model.

He left his mark in other ways as well. As chair of the College-wide task force on diversity in the early 1990s, he helped set the stage for the progress the College has made in this critical area. In this, as in all else he did, his legacy continues. ■



DR. SAUL L. BAHN, professor of oral and maxillofacial surgery, passed away on September 17, 2018. Saul served the College and the Department of Oral and Maxillofacial Surgery with distinction for 29 years. He leaves behind a legacy of outstanding contributions to teaching, research, and patient care.

A Diplomate of the American Board of Oral and Maxillofacial Surgery, Saul was widely recognized for his scholarly accomplishments both nationally and internationally with numerous teaching awards and invitations to lecture.

In addition to his professional distinctions, he was also an exemplary mentor to students and colleagues alike, always ready to listen and to provide wise and compassionate counsel, not only about dentistry, but, most importantly, about how to care for patients.

It is difficult to express the extraordinary appreciation of all of Saul's friends and colleagues in the Department of Oral and Maxillofacial Surgery and throughout the College for the many gifts he shared with us. His intellectual rigor and commitment to academic excellence, combined with his patience, kindness, compassion, and sense of humor, will be sorely missed. ■



DR. I. N. (NICK) QUARTARARO, former clinical professor of endodontics, passed away on November 21, 2018. Nick was a unique individual, wholly dedicated to his family, New York University, and the Department of Endodontics.

His was a life of commitment to education, students, and service. After serving in the Army in Europe during World War II, he received both his dental degree and his postgraduate certificate in endodontics from NYU, where he distinguished himself as an extraordinarily devoted alumnus and faculty member from 1952 until his retirement in 2011.

A peerless mentor to generations of pre- and postdoctoral endodontic students, Nick, and his wife, Sally, were honored by the College in 1997 with the establishment of the Dr. I. N. and Sally Quartararo Department of Endodontics, in recognition of a gift from their family. He was also a passionate advocate for alumni interests and involvement. He served as president of the NYU Dentistry Alumni Association and was recognized with the most prestigious distinction conferred by NYU on an alumnus — appointment as an alumni trustee to NYU's Board of Trustees, where he represented NYU Dentistry from 1989 to 1995. He also served as president of The Dental Society of the State of New York.

Nick's wisdom, kindness, and dedication to professional and teaching excellence will live on. He always spoke of his alma mater as his "second family," and we mourn his loss deeply. ■

WE THANK OUR BENEFACTORS

ALUMNI, FACULTY, FRIENDS, CORPORATIONS, FOUNDATIONS, AND ORGANIZATIONS — FOR THEIR GENEROUS SUPPORT OF THE COLLEGE. WE ARE PROUD TO RECOGNIZE YOUR GIFTS OF CASH, PLEDGE PAYMENTS, PLANNED GIFTS, GIFTS-IN-KIND, AND PLEDGES OVER \$25,000, WHICH WERE MADE BETWEEN SEPTEMBER 1, 2016 AND AUGUST 31, 2017.

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NEW YORK UNIVERSITY

College of Dentistry
David B. Kriser Dental Center
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"NYU shaped who I am and my philosophy of life as a predoctoral student and especially as a post-doctoral student in orthodontics, which was a very nurturing experience. We both learned how important it is to give back to young people so that they can have the same opportunities that we had."

— Efraim Zak, DDS

Read more about the philanthropy of Drs. Scott Friedman and Efraim Zak on page 56, "Orthodontic Program Alumni Drs. Scott Friedman and Efraim Zak on Why They Support Alma Mater."

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