

The Crowned Bostonian

Biannual Alumni Newsletter from the Department of Restorative Sciences and Biomaterials

Spring 2022

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A Message from the Chair



Dear Alumni and Friends,

It is a great honor for me to serve as the Chair of this exceptional Department, following the legacy and the vision of our previous Chair Dr. Dan Nathanson. I am beyond delighted to be a member of the Department of Restorative Sciences and Biomaterials family! Although I am not a Boston University alumnus, the entire community of the Henry M. Goldman School of Dental Medicine heartfully embraced me from the very first moment, making me feel truly at home.

I joined the Department of Restorative Sciences and Biomaterials in late January 2022 and was instantly impressed by the powerful energy and admirable passion this vibrant family shares! The blatant enthusiasm and momentum are certainly the product of the dedication and devotion our faculty, staff, and residents invest in our Department.

There is no doubt that the past two years have been particularly challenging for everyone, both on a national and an international level. We all hope that the most adverse phase of the COVID-19 pandemic is now well behind us, and that brighter days will dawn from now on. Global geopolitical turbulence has inevitably affected our economy and everyday lives too. During these difficult times, we have a duty to remain calm and focused on our multiple roles — as educators, dental health providers, researchers and mentors.

As educators we face great challenges, one of which is the tremendous increase of knowledge. New subjects affecting our specialty arise and will soon have to be implemented in the curriculum. Following this epistemic

advance, dentistry, too, is changing rapidly with regard to various aspects; we ought to continuously keep up with the evolution and the competition. Boston University has always been in the forefront of technological advances and we ought to live up to our tradition and legacy. It is true, however, that resources are declining, while public demands for accountability continue to grow.

Today, more than ever, we need to recognize the important challenges we will soon be facing, in this ever-changing society. In the face of such complications, we shall remain united as a family and create a collegial environment that will foster diversity, inclusion, and equity. This environment will enable us to provide our patients with the best treatment possible, offer unparalleled education to our residents, help people in underserved areas and communities and, last but not least, mobilize dental graduates to choose Prosthodontics as a specialty, embrace research, and become a part of academia. The latter is of utmost importance, as academic position announcements are increasing by the day, with little correspondence from the graduates.

Nevertheless, we at the Department of Restorative Sciences and Biomaterials also have a lot to celebrate. New dedicated and talented faculty members have joined our Department and, with the guidance and assistance from the “old guard,” teach the residents both in the classrooms and in the clinic. Their dedication to the school and to their specialty, as well as their talent in teaching has proved to be extraordinary.

This can be evidentially attested by the fact that the great majority of our third-year residents have successfully completed Part 4 of the Board Certification examination. This is an area we want to highlight, as it will help us promote the clinical aspect of our program and assist in strengthening our specialty.

We also intend to further emphasize research, as we believe that in academic institutions of our caliber, teaching, and clinical expertise should be complemented by high-quality research. The remarkable work that our research faculty are conducting should be acknowledged and promoted further by new initiatives, which will help more faculty members and residents become engaged in scientific research and progress. The latter becomes true through the cultivation of scientific curiosity. This has been expressed in an excellent way in Dr. Harold Slavkin’s 2017 paper “The impact of research in dental education:

How research and innovation shape dental education and the dental profession,” in which he discusses research and states, “I am not talking about the kind of curiosity that invites, but about the kind of curiosity that demands. Not about the kind that says I wonder, but about the kind that says I must know.”

This is the culture we need to foster and impart to our residents. This culture will also result in a larger number of publications in high impact peer-reviewed journals and it will accentuate our intention to contribute scientifically and promote our specialty through high-quality papers, which aim to inform rather than impress, to cultivate curiosity and a quest for knowledge rather than reproducing lines from textbooks, to question dogmas rather than accepting everything that has been advocated by “experts” in the past.

I recognize that we live in exceptionally hard times, and we have a demanding mission to accomplish. Our purpose is to create a bold, fearless but also caring Department, ready for the challenges of the future. A department in which all faculty members, staff, residents and alumni will be united for a common purpose: that of placing us in the No. 1 position both nationally and internationally. In that framework, all faculty members of our Department joined a collective effort to emphasize our strengths and reexamine our weaknesses, so as “To Excel in Education, Patient Treatment and Innovative Research in a Diverse Environment Aiming to Better Our Society.”

With my warmest regards,

Konstantinos Michalakis, DDS, MSc, PhD, FACP
Professor and Chair, Department of Restorative Sciences and Biomaterials

Meet the Faculty



Konstantinos Michalakis, DDS, MSc, PhD, FACP

Dr. Konstantinos Michalakis graduated from the School of Dentistry of the Aristotle University of Thessaloniki, Greece. He completed a 3-year Prosthodontics residency program at Tufts University School of Dental Medicine. He holds a PhD in Dental Materials from the Department of Prosthodontics of the Aristotle University of Thessaloniki, an MSc degree in Applied Biomechanics from the Department of Bioengineering of the University of Strathclyde, Glasgow, UK, and an MSc in Experimental and Translational Therapeutics from the Department of Oncology of the University of Oxford, Oxford, UK. He also holds a Certificate in Executive Leadership for Healthcare Professionals, from the Sloan Program in Health Administration, of Cornell University. He is a Diplomate of the American Board of Prosthodontics.

Before joining Boston University's Henry M. Goldman School of Dental Medicine he was a tenured Professor and the Director of Graduate Prosthodontics at the School of Dentistry of the Aristotle University of Thessaloniki and an Adjunct Associate Professor at the Division of Graduate and Postgraduate Prosthodontics at Tufts University School of Dental Medicine. He has lectured extensively at both national and international meetings and he has published numerous articles in high impact peer-reviewed journals in his areas of expertise.

Faculty in PROS, OP, DIGI



Hiroshi Hirayama DDS, DMD, MS, FACP

Dr. Hirayama is a Clinical Professor, a board certified Prosthodontist from the American Board of Prosthodontics, and the Program Director of GSDM Postdoctoral Prosthodontics since 2016. Previously, he was the Program Director at Tufts University School of Dental Medicine for over 20 years. He is a past recipient of the 2014 Educator of the Year award from the American College of Prosthodontists and the 2016 Garver-Staffanou Prosthodontic Program Director's Award for Excellence from the American Academy of Fixed Prosthodontics.



John Ictech-Cassis, DDS, DMD, CAGS, FICD

Dr. Cassis DMD 88 PROS 86 is a Clinical Professor at GSDM, Director of the Dental Health Center and Clinical Director of the Post-Graduate Operative and Esthetic Dentistry (PGOE) and Digital Dentistry programs. Before taking on the directorship of the PGOE and Digital Dentistry programs, he was the Director of the AEGD program for 25 years. He was the recipient of the 2006 Spencer N. Frankl Award for Excellence in Teaching. He regularly teaches Continuing Education courses at GSDM as well as gives national and international lectures.



Luis Del Castillo DDS, DMD

Dr. Del Castillo joined the Postgraduate Prosthodontics Program at GSDM in March of 2021. Prior to joining BU, he was a Prosthodontics faculty at Tufts University School of Dental Medicine for 18 years teaching both predoc students and postdoc residents. He completed his postgraduate prosthodontic studies at Tufts University in 1999 under the guidance of Dr. Hiroshi Hirayama. Shortly after joining the Pros program at BU, he became the Clinical Director and is currently fulfilling this position. Aside from his teaching responsibilities, Dr. Del Castillo runs a private practice in downtown Boston. Dr. Del Castillo enjoys spending time with his residents and mentoring them to become better prosthodontists and maintain the level of excellence that the program has.



Ali Abdallah, BDS, CAGS, DScD

Originally faring from Beirut, Lebanon, Dr. Ali Abdallah PROS 21 is a proud alumnus of the Faculty of Dentistry of Beirut Arab University, Class of 2016, in Beirut, Lebanon. After dental school, Dr. Abdallah moved to Boston, together with his wife - also his dental school sweetheart. He pursued a five-year Prosthodontics residency at Boston University GSDM. In 2021, he obtained a Certificate of Advanced Graduate Study (CAGS) in Prosthodontics and a Doctor of Science in Dentistry (DScD) in Biomaterials. Soon after, Dr. Abdallah joined Boston University GSDM as a faculty member at the postgraduate level at the rank of Clinical Assistant Professor. He was awarded the John Stanford New Investigator Award in January 2022 for his research on polymer machinability. He has joined the ADA Standards Committee for CAD/CAM - Sub-TAG 9.



Mohammad Hossein Dashti, DMD, CAGS, FACP

Dr. Dashti DMD 88 PROS 91, Clinical Associate Professor of Prosthodontics, considers himself privileged for having outstanding teachers and mentors throughout his education, most of whom are the leaders in the profession. He believed that Prosthodontics has been the right choice of specialty for him and he has been passionate about it. It is, however, an “all-or-none” type of specialty. As Steven Campbell once said, “In Prosthodontics, you either give it all you got or nothing at all.” Dr. Dashti is a Diplomate of the American College of Prosthodontics. He received multiple Teaching Excellence Award in Postdoctoral Prosthodontics by the graduating classes of 2014, 2015, 2016, and 2018. He was a recipient of the McCahan Faculty Recognition Award for Teaching Excellence in May 2021. He is also serving as members of the ACP committee for Residents Mentorship for American Board of Prosthodontics, the ACP Prosthodontic Review Course Committee, and the GSDM Faculty Forum.



Manuel Garcia, DDS, CAGS

Dr. Manuel Garcia PROS 87 moved from Mexico and joined the BU faculty at the Department of Prosthodontics and the AEGD Program in 2002. Since then, he has been involved in many preclinical and clinical courses. In 2008, he started working part time at the BU Dental Health Center. He is a Clinical Associate Professor in Operative Dentistry and Digital Dentistry.



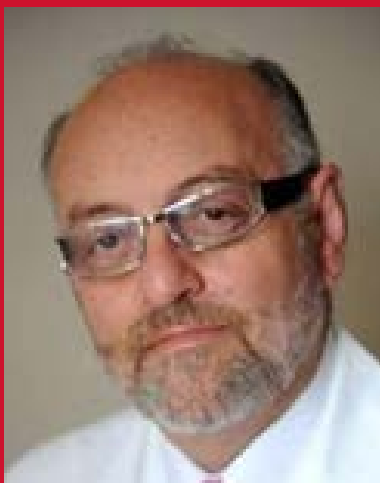
Gurkan Goktug, DDS, DMD, CAGS

Dr. Gurkan Goktug DMD 08 PROS 01 joined the faculty in GSDM postdoctoral prosthodontics immediately upon his graduation from the CAGS program in 2001. He was the course director of the Basic Prosthodontics Techniques course from 2002 until 2018. In 2021, he was promoted to clinical associate professor. He received the Residents’ Award for Teaching Excellence in 2006, 2007, 2009, 2010 and 2011 and the Resident’s Faculty Appreciation Award in 2014. Dr. Goktug has been actively teaching continuing dental education courses for 19 years. He has lectured nationally and internationally. He has published in peer-reviewed professional dental journals.



Andre Hashem, DDS, DMD, CAGS

Clinical Professor Dr. Hashem PROS 90 DMD 92 is a part-time prosthodontic faculty member in the Department of Restorative Sciences and Biomaterials. He also runs a private practice Smile Design Boston in the financial district in Downtown Boston where he practices with his wife Dr. Christine Lo PROS 92.



Zhimon Jacobson, DDS, DMD, CAGS, MSD

Dr. Jacobson DMD 81 PROS 80 is a Clinical Professor of Prosthodontics. Apart from teaching in the clinic, he is also the Course Director of several interdisciplinary courses: Implantology Literature Review, Implantology Literature Topics, Implantology Case Presentations, and Predoc Implantology. Dr. Jacobson also maintains a private practice in Boston, MA, and lectures both nationally and internationally.



Peixi Liao, BDS, CAGS, DScD

Dr. Liao PROS 18 is a Clinical Associate Professor of Prosthodontics, Operative Dentistry and Digital Dentistry. He is a spearhead of digital dentistry education. He is the Course Director of Digital Dentistry in Prosthodontics & Restorative Sciences and Course Director of Advanced Laboratory Experience Course. In Spring 2022, he was promoted to the rank of Clinical Associate Professor and also received the 10 Under Ten 2022 Award from the Massachusetts Dental Society. He is married with a daughter and expecting his second daughter.



Stanislava Misci, DMD, CAGS

Dr. Misci DMD 14 PROS 06 served as a Clinical Director in the Prosthodontic Patient Treatment Center from 2017 to 2021. She received the Faculty Appreciation Award by the Prosthodontic residents in 2020. She was promoted to the rank of Clinical Associate Professor in 2021. She is a Diplomate of the American Board of Dental Sleep Medicine.



Hideo Yamamoto, DDS, DMD, CAGS

Dr. Yamamoto PROS 90 DMD 92 is a Clinical Professor of Prosthodontics. He got married on October 10, 2021, to Dr. Yuko Otsubo PROS 17.

Biomaterials Research Faculty



Russell Giordano II, DMD, DMSc, FADM, FADI, CAGS (Prosthodontics)

Dr. Giordano is the Director and Assistant Dean of Biomaterials and Biomaterials Research at GSDM with a joint appointment as an Associate Professor in the BU Division of Materials Science and Engineering. He received a DMD, certificate in prosthodontics, and DMedSc at the Harvard School of Dental Medicine based on his research conducted in ceramics processing and 3D printing at MIT. He is a Fellow of the Academy of Dental Materials and a Fellow of the Academy of Dentistry International. Since 1987, he has actively involved in materials development and testing for CAD/CAM systems. His research into CAD/CAM materials led to the invention and development of a new machinable block introduced in 2013, marketed as Enamic. He holds several patents on this and other materials. He lectures nationally and internationally and he is actively involved with the development of national and international standards.



L. Lee Chou, DMD, CAGS (Oral Pathology), CAGS (Oral Medicine), PhD

Dr. Chou is a Professor of Biomaterials, Professor and Director of Oral Medicine. He was the 29th recipient of the Metcalf Cup and Prize, the highest teaching award of Boston University. His research areas and interests are in Molecular Biocompatibility of Biomaterials, Tissue Engineering.



Yuwei Fan, PhD

Dr. Yuwei Fan is a Research Associate Professor in Biomaterials. Dr. Fan's research interests are biomineralization, enamel regeneration, electron microanalysis, digital dentistry technology, functional biomaterials, dental materials property evaluation, and restorative materials clinical performance. He has authored/co-authored 65 peer reviewed articles with an h-index of 20, 125 conference abstracts/proceedings, two patents, and one book chapter. He has served as research mentor for 58 residents on their thesis projects and 22 dental students at BUGSDM. He has supervised residents and students with well-designed experiments to acquire both scientific facts and research skills in the biomaterials lab. Dr. Fan encourages young dental researchers to keep a strong curiosity and intrinsic motivation to solve the problems arising from clinical practice.

MEET THE GRADUATING CLASS

Graduating CAGS Residents



Mohammed Moeeduddin Ahmed PROS

My name is Mohammed Moeeduddin. Before joining my current program, I completed dental school in India and a master's program in dental science from Rutgers University in New Jersey.

When I decided to apply for the Prosthodontics residency program, I was looking for a program that also has a percentage of time dedicated to dental biomaterials research. I was excited to see the biomaterials lab at BU and the projects that were going on then. What brought me to BU is the combination of advanced clinical exposure that BU Prosthodontics offers combined with biomaterial research experience. On the day of the interview, when I was given a tour of the clinic and biomaterials lab, I decided that I wanted to be at BU. After completing the program, I am planning to work at a government dental health center while being involved with research and academia on a part-time basis.



Taha Akhtar PROS

I represent two countries: Saudi Arabia, the place where I was born and raised, and Pakistan, the homeland of my parents, which I truly respect. I would like to thank my parents and brothers who supported me both emotionally and financially to take this big step forward in my career. I graduated from Batterjee Medical College in Saudi Arabia. I came to BU because of encouragements from my mentors Dean Basem Abuzenada, Dr. Adnan Ishgi as well as many other great BU dental graduates. I would actually call it a life-changing experience where I learnt Prosthodontics in great depth. Every faculty in our department is absolutely unique. They really make sure that every resident learns every

hand skill and has all the knowledge. My best personal experience is that I met the love of my life, my wife, here at BU; she is currently an endodontic resident. My plan after graduation is to join both the academic and clinical fields, to give back with all the energy that I have through teaching and by treating patients.



Raghdah Alshaibani PROS

I graduated from King Saud University with BDS in 2017. I was enrolled in the Saudi Board Program in Prosthodontics, where I completed 1.5 years of advanced specialty training. But my goal has always been to study in the U.S., specifically at BU, because its programs are outstanding in clinical, laboratory, and research training. So I applied and started my program in 2019 and am currently enrolled in the combined program with DScD. I am so grateful to be part of BU family, I have learned so much and met amazing people. I am planning to complete the program and go back to serve as an assistant professor at Princess Nourah Bint Abdul Rahman University, where I intend to use the skills and knowledge I gained from the program to be an educator for future generations in my home country.



Reem Al Shaltoni PROS

My name is Reem Al Shaltoni. I am originally from Palestine but was born and raised in United Arab Emirates. I received my DDS from Ajman University in U.A.E. in 2015 with merit of excellence. I worked at a prestigious medical center in Dubai as a general dentist under the supervision of my mentor, Dr. Faysal Succaria, a GSDM Prosthodontic alumnus. His mentorship only made me more passionate and motivated to pursue postgraduate education in

prosthodontics at GSDM. There have been a plethora of very memorable moments during my years here, from learning from the venerable faculty, the kindest and most supportive staff, to the lovely city of Boston. Surely the most memorable of which are the lifelong friendships with the most wonderful classmates, who through our shared experiences and sacrifices have become more than family. Also, I will never forget the happiness my patients felt after completing their treatment plans. Their patience and perseverance is so inspiring. I am looking forward with great exuberance to working on my research proposal in pursuit of Prosthodontics MSD.



Esteban Molina PROS

My name is Esteban Molina, I was born and raised in Costa Rica. I came from a family of two dentists. I did my dental school at the University of Costa Rica. As I was about to graduate from dental school, I was looking into how technology and dentistry can get together to offer more predictable and repeatable results. Ultimately my passion for technology made me realize that I needed to learn a lot more, not only in digital dentistry but in prosthodontics. That made the decision of coming to BU easy. Boston University has been a pioneer in terms of technology and digital dentistry in America. I cannot forget to mention the experience of living through a pandemic during residency. During the lockdown, Boston University is and became closer as a family and I will never forget how all our faculty and staff were trying to make sure everything was fine with everyone. After completion of the residency, I hope to be able to combine academia and private practice. Pura vida!



Nika Iranmanesh PROS

I was born and raised in Tampa, FL, where I attended the University of Tampa and received my bachelor's degree in Biology with a minor in Chemistry. What initially brought me to Boston University was my father, who is a graduate of BU Prosthodontic program. I initially came only to complete my dental degree at Boston University, but when the opportunity presented, I then stayed for my prosthodontic residency as well. BU has been a great experience not only related to dentistry as I feel I received an outstanding education but it has also exposed me to different cultures and backgrounds which I would have never been exposed to otherwise, and for that I am extremely grateful. The plan for the future is to join my father and brother back in Florida and develop further with everything that BU has taught me.



Azim Rabiei PROS

Graduated from dental school at 2005 in Iran with DDS degree, practiced dentistry for 10 years, and a few years of teaching experiences in dental school, that concluded the first season of the life for me. The new season was started when I moved to United States. I decided to come to BU as the prosthodontist whom I worked with had graduated from BU about 25 years ago, and he has excellent knowledge, skills and great memories from BU. At BU prosthodontics program, we are more than busy to be able to make a memorable experience. All the nights and weekends that we spent in the lab are what we all will remember. The COVID lockdown, even though it was heartbreaking, played like a cold water on the fire of our busy lab works. My plan for past, present and future

is always to remind myself this is my responsibility to enjoy life and help others to do the same. The next season of my life as a prosthodontist will be focused to help my patients to have a nicer smile. In the meantime, I will consider teaching and be involved with schools as it was always my dream.



Nassif Youssef PROS

My professional career started with the choice I had made to join dental school back in 2012. It was such a long journey till I have reached here to this day graduating from prosthodontics program at such a prestigious school. I decided to come to Boston University when I learned about the advanced dental technologies available, the one-on-one teaching methods and the amount of cases residents are exposed to. One of my most memorable moments at BU was the day my classmates and my faculty threw me a birthday celebration, which essentially made me feel like we are in one big family. After graduation from BU, I will eventually go back to Italy and open my own practice in a few years.



Ahmad Magboul OP

When I was a student at Al Battarjee Medical College, I was impressed by the level of dedication my mentors had not only for their students but for the patients as well. The environment encouraged me to move forward and made me even more passionate about dentistry. After dental school, I completed a one-year clinical training Advanced Program for International Dentists in Oral Surgery followed by a Master's degree program in clinical research at New York University. I was always curious about dental research, how its performed, regulated and how it is involved in our day-to-day clinical practice. Currently, I am expecting to graduate from the Operative Dentistry program in June 2022. I was extremely fortunate to get into this program and

be trained under the hands of the well-known Dr. John Cassis. I knew I wanted to take my abilities and skills even further and learned that my passion for dentistry is even stronger. Since Endodontics always have a place in my heart, I will be applying to Endodontics as my next step.



Abdelrahman Elgendy OP

I was born and raised in Egypt. I received my bachelor's degree in dental medicine from the Modern Science and Arts University in Giza, Egypt. After completing an internship program, I worked as general practitioner for three years. In addition, I had worked for four years as a dental laboratory technician and manager, specializing in all areas of production (C&B, removables, and implants, etc.) where I got to enjoy the artistic part of the dental profession while gaining valuable skills in all phases of the dental lab procedures. My immediate and long-term career plans involve teaching esthetics and digital dentistry to assist in cultivating the next generation of dentists, continue with research on developing digital dentistry techniques and materials, and further improve at the intersection of prosthetic dentistry dental lab fabrication techniques and workflows, as well as digital dentistry, to provide top-notch treatment options to our community.



Reem Alsaleh DIGI

Dr. Alsaleh is expected to complete her CAGS in DIGI by June and continue on with her three-year CAGS program in PROS starting in July.

Graduating MSD/DScD Research Residents



Saad Alfadhli, MSD (PROS)

I earned my BDS in 2012 from the University of Dundee in the United Kingdom. After graduation, I worked in the Ministry of Health in Kuwait for five years in addition to a one-year internship. In 2014, I completed my MFD diploma from the Royal College of Surgeons in Ireland. I joined the Goldman School of Dental Medicine, specializing in Prosthodontics, in 2018 for the clinical residency training followed by MSD research. I am eager to start my career as a prosthodontist, so I can contribute back to my community and treat patients using the knowledge and skills gained from my training. I hold tremendous gratitude to the BU family and will always appreciate the learning opportunity provided.



Yousef Behbehani MSD (PROS)

I grew up in Kuwait. I came to BU for my undergraduate and DMD programs. Subsequently, I did one year of general practice residency in the St. Barnabas Hospital in the Bronx, New York, in 2016/2017. Then, I returned to Kuwait for general dentistry practice in 2017/2018. Since Fall 2018, I returned to GSDM for postdoctoral prosthodontics training. I felt that in the past few years, there are too many special events and experience to name but there are two that stands out. Miami ACP conference was the first time I got the chance to travel together with the pros colleagues and experience both fun bonding experience as well learning a lot through the convention itself and poster presentations. And of course going through the whole pandemic together as a team was an experience I can never forget. I felt that we grew a lot from that. My plans after graduation are still in flux. I am working



Lea Hajjar MSD (PROS)

I am a Lebanese-American citizen who grew up in Abu Dhabi where I spent 17 years of my life attending a French high school. My love for dentistry started early and being raised by parents that are both dentists has without a doubt incited me to become one of my own. In 2013, I joined the dental program at the Saint Joseph University in Beirut, Lebanon and after graduation in 2018, I joined the GSDM Prosthodontics family. Knowing that GSDM is at the forefront of incorporating digital dentistry in Prosthodontics, the possibilities are endless. The program and the school's diverse body exposes its staff and students to a multitude of ways of thinking and working. Being a prosthodontics resident is hard. But doing it while being in a pandemic is even more challenging. I will always remember how the faculties and staff did their best to always keep the department close. I am now enrolled in the final year of the four-year CAGS & MSD program here at Boston University and am very excited for the next chapter of my life as a Prosthodontist in the real world.



Hashem MullaYousef MSD (PROS)

I was born and raised in Kuwait. I did my undergraduate studies in Virginia Commonwealth University. I got my DDS from same school, VCU dental school. After that, I went back to Kuwait to work for three years in polyclinic where I did general dentistry. When I applied to prosthodontics residency, I chose BU dental school because it has a great reputation back in Kuwait where their graduates are well known educators and clinicians. One of the most memorable experiences at BU is during COVID time, the program had

to be resilient and continue studying through endless Zoom meetings. My plan after graduation is to work for the government multi-specialty center and part time in private practice as prosthodontist.



Dimah Alanazi MSD (OP)

I am Dimah Alanazi. I graduated with a BDS degree in 2015 from Saudi Arabia and completed one year of externship in the prosthodontic department at the University of Maryland in 2018. As several of my faculty recommended BU to me, BU is now like my second home. It has very remarkable people from all over the world. We get to know each other's different culture. I am planning to go back to Saudi Arabia after completing my program here. I enjoy learning and will certainly keep up with continuing education as I develop my career.



Ali Mohamed DScD (OP)

My name is Ali Mohamed. I was born and raised in Tripoli Libya. After graduating with a BDS from Tripoli University School of Dentistry, Libya, in 2011, I completed a one-year internship training program in Cairo-Egypt Ein Shams University in 2012. Then, I worked in a private dental clinic in Tripoli, Libya, from 2012 until 2014. In 2017, I started the Certificate of Advanced Graduate Study (CAGS) in Operative and Esthetic Dentistry program at GSDM combined with DScD in Restorative Sciences & Biomaterials. I chose BU due to its reputation for high-quality education, prestigious programs, and its hospital environment. As a dentist, I've worked in three countries (including the United States) and treated clients from diverse socio-economic and cultural backgrounds. I appreciate being challenged and executing various dental treatments.



Muad Suleiman MSD (OP)

I attended the Tripoli University Faculty of Dentistry in Libya, where the journey of my long-term dream to become a dentist began. In 2009, I earned my BDS degree and then I spent one year on rotational clinical training in Cairo University Faculty of Dentistry in Egypt. After finishing my training, I returned to Libya and became a clinical instructor at Tripoli University Faculty of Dentistry. Concurrently, I was hired at a private dental clinic in my town, where I was able to work with patients from all economic, social, and cultural backgrounds. Both of these places provided me with valuable experiences. I am now working to complete my MSD research. My long-term goals are to help establish an institute that supports improving the oral healthcare situation in Libya. I endeavor to import knowledge to future generations in Libya through this institute.

THE PROGRAMS OF OUR DEPARTMENT

Prosthodontics

The Postdoctoral Prosthodontics Program offers advanced education in fixed, removable, and implant prosthodontics through clinical residency training in three years. The Certificate of Advanced Graduate Study (CAGS) program can be combined with MSD research for a minimum duration of four years or DScD research for a minimum of five years in total. The program currently has 24 residents in the CAGS program, five in the MSD program and five in the DScD program. All residents treat a large variety of complex cases and they are required to take the American Board of Prosthodontics Section A and one part of Section B exams.

Operative Dentistry

The Postgraduate Operative and Esthetic Dentistry program offers two years of advanced education in the conceptual, biological, and practical components of operative and esthetic dentistry. The CAGS program can be combined with a one-year MSD or a three-year DScD. The program currently has six residents in the CAGS program, two residents in the MSD program, and two in the DScD program.

Digital Dentistry

The Digital Dentistry program offers a one-year advanced education centered on didactic and clinical experience in digital and CAD/CAM technology for comprehensive dental treatment. The program currently has one resident.

Biomaterials Research Overview

Current DScD/MSD programs

In the past year, the Department of Restorative Sciences and Biomaterials has continued to serve as a major platform for supervising research. The department worked with 28 DScD/MSD students for thesis projects in collaboration with other departments across the school, as well as 10 DMD students for their externship research projects. In the past 10 years, the faculty of this department mentored a total of 144 DScD/MSD students, and received 18 national and international awards. The department will continue to contribute its strength in collaborating with other departments and the University for the school's graduate programs.

History of Innovation

Dr. Giordano's research has been focused on solving clinical needs and is thus primarily applied or translational research. His research into CAD/CAM materials led to the invention and development of a new machinable block introduced in 2013,

marketed as Enamic. It is the only material of its kind based on a novel combination of interpenetrating ceramic and polymer phases that leads to energy absorption, improved fracture resistance, wear kindness, and machining with minimum chipping even to a thickness as small as 0.1 mm. He holds more than 27 patents on this and other materials, including ridge augmentation materials, ceramic block materials, radio-opaque paints for visualization of devices with cone beam CT, and digital dentures. Dr. Giordano also served as Chair of the Digital Dentistry Task Force charged with implementing a "fully digital" vision at the dental school. This involved examining digital dentistry systems, determining clinical and preclinical needs, and selecting the systems that best match these needs and implementing these systems into the clinic. GSDM announced on October 10, 2014, a formal collaboration with Sirona Dental Systems for integration of chairside scanners, lab-based scanners, and cone beam CT into patient diagnosis and treatment.

Based on the research findings from his groundbreaking studies, Dr. Chou first demonstrated the bioactive rather than inert nature of biomaterials, leading to a theory of "Molecular Biocompatibility" of biomaterials. He further translated this theory into the multiple novel materials and techniques for clinical applications. One of the examples is an invention of the bioactive and biomimetic scaffolds for bone tissue engineering, which have successfully been used in bone tissue engineering for over 200 patients with large bone defects. The successful cases have been followed up for over 20 years.

Publications 2021+

Mohammed Moeeduddin MSD PROS 22, along with Dr. Fan and Dr. Nathanson, had a publication "Effect of Firing Cycle and Etching Protocols on Tensile Bond Strength of Composite Cement to Zirconium-incorporated Lithium-Silicate Glass Ceramic." in The Journal of Adhesive Dentistry, (DOI: 10.3290/j.jad.a45518, PubMed ID (PMID): 33491406). One of the SEM images was featured on the cover of the Dec. 2020 issue.

Supontep Teerakanok DScD PERIO 21, along with Dr. Fan, published an article "Interaction of doped magnesium, zinc and fluoride ions on hydroxyapatite crystals grown on etched human enamel." Supontep Teerakanok, Minglei Zhao, Russell Giordano, Yuwei Fan; Journal of Crystal Growth, Volume 571, 2021.

THE PROGRAMS OF OUR DEPARTMENT

Rami Alhomrany DScD ENDO 21/Rania Salem DScD ENDO 24 along with Dr. Chou had several publications:

R. Alhomrany, C. Zhang, and L. Chou. Genotoxicity induced by cellular uptake of chitosan nanoparticles in human dental pulp cells. *The International Journal of Materials Science and Applications*. 10(4), 79-86, 2021.

R. Salem, C Zhang and L. Chou. Effect of Magnesium on Dentinogenesis of Human Dental Pulp Cells. *International Journal of Biomaterials*. ID 6567455, //doi.org/10.1155/2021/6567455, 2021.

R. Salem, C Zhang and L. Chou. Dentinogenic Effect of Magnesium Oxide on Normal Human Dental Pulp Cells: An In Vitro Study Part I. *Madridge Journal of Dentistry and Oral Surgery*. 6(1), 106-115, 2021.

R. Salem, C Zhang and L. Chou. Part II: Dentinogenic Effect of Magnesium Oxide on Expression of Extracellular Matrix Proteins in Normal Human Dental Pulp Cells: An In Vitro Study. *Madridge Journal of Dentistry and Oral Surgery*. 6(1), 116-126, 2021.

Publications 2022 to date

An exchange research collaboration with The University of Manchester, London, England, led to the following publication: Alharbi N, Teerakanok S, Satterthwaite JD, Giordano R, Silikas N. Quantitative nano-mechanical mapping AFM-based method for elastic modulus and surface roughness measurements of model polymer infiltrated ceramics. *Dent Mater*. 2022 Mar 12:S0109-5641(22).

Abstracts and Presentations Highlights 2021

Sixteen students and faculty from Restorative Sciences and Biomaterials presented at the 2021 IADR meeting.

Dr. Yuwei Fan presented an abstract "Evaluation of Restorative Material Clinical Performance in a Dental School," on IADR 2021. This study utilized the data from Salud records and compared the survival of single crown restoration for different types of restorative materials.

Yi-Chen Ma's DMD 21, working with Dr. Fan, Dr. Liao, and Dr. Giordano, research paper, "Effect of Scanning Sequences on the Accuracy of Full-Arch Scan" was a finalist for the prestigious Arthur R. Frechette Research Award in Prosthodontics at the IADR meeting.

Dr. Giordano has been serving as the U.S. expert on ceramics and on polymer restorations, chair of CAD/CAM materials, and head of the delegation on prosthodontic materials. He gave a keynote speech at the 2021 meeting of International Standards Organization on Dentistry held on August 23 - September 3, 2021, on the development of new international standards for dental ceramics and CAD/CAM systems. Dr. Ali Abdallah PROS 21 was invited to present his paper at the ADA Standards Committee on Dental Products and the U.S. Technical Advisory Group to the International Organization for Standardization Technical Committee 106 on Dentistry Meeting in Atlanta where national and international dental standards are discussed. The meetings were held on March 21-23, 2022, at the Omni Hotel at CNN Center.

Abstracts and Presentations 2022 to date

Eight students and faculty from Restorative Sciences and Biomaterials presented at the 2022 American Association for Dental, Oral and Craniofacial Research/Canadian Association for Dental Research (AADOCR/CADR) meeting on March 21-26. It was a hybrid meeting held in-person in Atlanta, Georgia, with some virtual components.

On Thursday, March 24, 2022, Dr. Afaf Khayat PROS 21, recent graduate and current Clinical Assistant Professor in General Dentistry, presented a virtual interactive talk session on "The Effect of Denture Cleansers on Properties of Various Denture Materials."

On Friday, March 25, 2022, Homoud Kakooli PROS CAGS/MSD 24 gave a virtual interactive presentation on "The Mechanical Properties of Multilayered Zirconia Materials Subjected to Repeated Firing."

Awards 2021 - 2022

Megha Shah PROS DScD 25, Karina Rochabrun PROS MSD 25, and Julian Munoz DMD were recipients of the Best Oral Presentation Awards at 2022 GDSM Science Day, covering the three categories of Postdoctoral, Masters and Predoctoral student research respectively. Their mentors are Dr. Giordano and Dr. Fan.

Ali Abdallah PROS 21 received the 2022 Stanford New Investigator Award at the IADR meeting. His research on "Merlon Test to Assess the Machinability of High-Strength CAD/CAM Dental Polymers" was mentored by Dr. Giordano and Dr. Fan.

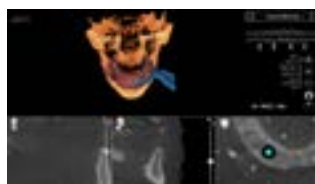
OUR DEPARTMENT IN THE CENTER OF TECHNOLOGICAL ADVANCEMENT

Boston University Henry M. Goldman School of Dental Medicine (GSDM) in 2014 implemented a “fully digital” vision for providing oral healthcare to patients and for educating its students. The initial implementation of digital dentistry in clinical education began with the applications of Dentsply-Sirona (D-S) Chairside Economical Restoration of Esthetic Ceramics (CEREC) system and Galileo Cone Beam CT Scanner. Using the CAD/CAM system and digital scanner, residents can make ceramic restorations in a single visit. Since then, the prosthodontics program has been embracing a broad range of digital technologies and systems for restorative education and treatment. These include:

- Clinical CAD/CAM system: CEREC Omnicam CAD/CAM system
- Intra Oral scanner: Medit i-500 intraoral scanners
- Laboratory Scanners: D-S inLab MC X5, 3 Shape E4
- Softwares: D-S Inlab 20, 3 Shape Dental, Exocad DentalCAD, Nobelbiocare DTX
- Implant planning softwares: Nobelbiocare DTX, Sidexis
- Milling machines: D-S inLab MC X5, D-S MCXL, Roland DWX-52DCI (with Disk changer)
- 3D printers: Carbon 3D, Form 2, Form 3 (Formlabs)
- Jaw tracking units: CADIAX 2, CICAT JMT
- CBCT: D-S Galileo CBCT, i-CAT

Education

Digital technology education has been more organized and emphasized starting from the summer of the first year, when our new residents receive preclinical training on the



fundamentals of prosthodontic education. The CEREC chairside CAD/CAM system is the initial focus. Then the digital training expands to prosthodontic driven implant treatment planning and design of surgical guides, followed by the production of milled or 3D printed guides. The post-doctoral prosthodontics team of faculty and residents are now heavily involved in the process of implant treatment planning, design and production of CAD/CAM surgical



guides. SICAT, Nobel Biocare DTX X-Guide (a dynamic 3D navigation system) and Yomi (a robotic-assisted system for dental implant surgery) are used to enhance implant planning and guided surgery education.

The laboratory CAD/CAM system has been enhanced to replace conventional prosthodontic laboratory works. Using the digital workflow, residents can complete the entire

treatment from digital diagnostic wax up, CAD/CAM provisional restorations to completion of their cases. The workflow covers all aspects of prosthodontic treatment from removable complete denture (Milling: AvaDent, 3D print: Dentsply-Carbon 3D), RPD: digital designing, 3D printed Co-Cr metal framework by 3DRPD and all fixed restorations which include complete arch implant Zirconia restorations.



Digital planning to provisional restorations by Dr. Nika Iranmanesh, including all clinical and digital laboratory works.



Development

There are also many research projects on digital dentistry, CAD/CAM materials including PMMA and zirconia, 3D printed denture systems conducted by residents, under the guidance of Dr. Russell Giordano and faculty in the Division of Biomaterials. For instance, a current MSD resident is studying the 3D dental photogrammetry for accuracy of implant verification. To keep up with the evolving digital technology for postdoctoral education, Dr. Peixi Liao has been assigned to specialize in the testing, organization and implementation of digital technologies. His work has been instrumental in organizing digital education for our residents and faculty in prosthodontics. Dr. Liao also supports collaborations with other specialties on the implementation and integration of digital technologies across departments.



The new face of our school

In September 2021, the school celebrated the successful completion of the three-year, \$115 million renovation and expansion project. The project incorporated state-of-the-art technologies into the education programs for students and enhanced the patient treatment experience. The prosthodontic treatment center remained on the second floor while the operatories for operative dentistry and digital dentistry remained as part of the Dental Health Center on the seventh floor. The prosthodontic lab was relocated from the Evans Biomedical Research Center at 650 Albany Street to the third floor of the dental school. A new 3D printing room was added to the seventh floor. At our three programs' home base on the second and seventh floors, several small well-equipped conference rooms along with a number of individual computer workstations are available to accommodate flexible multipurpose group functions and individual digital work. The new patient reception areas, cubicles, and offices embrace an open and contemporary outlook with ample daylight. The facelift effectively infused positive energy that enhanced engagements and collaborations in the school community.



PLEASE JOIN US

Alumni Gathering at the 14th International Symposium on Periodontics and Restorative Dentistry

Thursday, June 9, 2022

6:00 – 8:00 PM

Rochambeau

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Register now at bu.edu/dental/register