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Osseointegration
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Academy NEWS

A QUARTERLY MEMBER NEWSLETTER

AO Plans Monumental Experience for 2019

*Blending Science and Reality for
Clinical Excellence*

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TABLE OF CONTENTS

<i>President's Message:</i> Carrying on with the AO mission	3
Osseointegration as a life-changing solution in the Military Health System	4
Internationally recognized husband-and-wife research team: an implant dentistry success story	6
With European focus, 2019 Annual Meeting program answers questions clinical teams ask every day	10
Take time to visit America's capital	12
Academy holds Quadrennial scientific Summit to determine risk factors for predictable osseointegration	15
AAP honors AO Director Dr. Hom-Lay Wang	16
AO events and CE calendar	16
<i>6 keys to team stability</i>	18
<i>Editor's Editorial:</i> A question of reality	19

ACADEMY NEWS

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President's Message

Carrying on with the AO mission

By James C. Taylor, DMD, MA

As August came to an end and thus the North American summer, so did the final details of the arrangements phase of our 2019 Annual Meeting. Indeed, by the time you read this, the registration and hotel web pages will be open and you'll already be making your flight and hotel bookings to join us in Washington, DC. I'm looking forward to seeing you all there!

Meanwhile, and literally halfway around the world, the end of August saw another key event in the AO calendar. On August 29th, AO Member and Periodontist Dr. **Paul Lin** from Taipei, Taiwan, represented AO as a speaker at the 2018 CSA-FDI Dental Summit in Shanghai, on the topic of *Predictable Replacement of Existing Teeth with Dental Implants in the Esthetic Zone*. The Chinese Stomatological Association (CSA) partners annually with the FDI World Dental Federation's Asia-Pacific Regional Organization to present this significant regional meeting, in which AO is proud to play a part. As you'll recall, AO is an Affiliate Member of the FDI, and has a strong and growing relationship with the CSA.



AO Member-Speaker Dr. Paul Lin speaking at the 2018 CSA-FDI Dental Summit in Shanghai.

Soon thereafter and back in the Western Hemisphere, I was on my way to Buenos Aires to represent AO in World Dental Parliament, and to moderate our annual AO/FDI Symposium which was held on September 7th within the 2018 World Dental Congress of the FDI World Dental Federation. This year we featured an outstanding trio of continental Member-Speakers: Drs. **Mauricio Araujo** from Brazil, **Alejandro Lanis** from Chile, and **Roberto Blanco III** from Argentina. Predictably, these three gentlemen gave outstanding and complementary presentations on their respective approaches to the world-class evidence-based care in comprehensive implant dentistry that they provide for their patients. We look forward to continuing this fine global tradition at FDI 2019 in San Francisco, CA, USA.

Back in North America once again, it was soon time for our October AO Board of Directors meeting in Chicago, where we deliberated on a packed agenda of AO business. One key item of business was the Quadrennial AO Summit, and involved a close-out discussion on our recent 2018 Summit, and the initiation of planning for our 2022 Summit as well as the selection of AO Board Members Drs. **Clark Stanford** and **Jörg Neugebauer** as our 2022 Summit Co-Chairs.



The 2018 AO/FDI Symposium: (L to R) Drs. Roberto Blanco III, Mauricio Araujo, Alejandro Lanis, and AO President James Taylor.

Finally, AO's Ambassador in Spain, Dr. **Fernando Rojas-Vizcaya**, organized and hosted yet another highly successful AO Spain Charter Chapter meeting, this time at the University of Valencia. The event took place on October 27th and 28th, and featured an outstanding lineup of regional speakers. Fernando has already started to organize the 2019 meeting of the Spain Charter Chapter, so watch our AO website for updates!



The 2018 AO Spain Charter Chapter meeting speakers: (L to R) Drs. Primitivo Roig, Rui Figueiredo, Ramón Ceballos, Rafael Del Castillo, Miguel Peñarrocha, Fernando Rojas-Vizcaya, Nicolás Gutierrez, Rodrigo Nebreda and David Peñarrocha.

And so once again it was just another typical fiscal quarter in the history of the AO, as we collectively continue to shape the present and future of global implant dentistry for the benefit of our patients worldwide.

Osseointegration as a life-changing solution in the Military Health System

“World-class” is how the research of United States Navy Capt. (Dr.) Jonathan Forsberg in developing osseointegration rehabilitation throughout the spectrum of patient care in the U.S. Military Health System (MHS) has been described.

An orthopedic oncologist at Walter Reed National Military Medical Center (WRNMMC), Dr. Forsberg is also Director of the U.S. Department of Defense (DoD) Osseointegration Program there. In addition to his work at WRNMMC, Dr. Forsberg is an Assistant Professor of Surgery at Johns Hopkins University, where he provides surgical care at the Kimmel Cancer Center at Sibley Memorial Hospital.

Following the mission of the DoD Osseointegration Program, his goal is to develop osseointegration as a capability in the MHS, as well as technologies and regenerative approaches complementary to it. Throughout the MHS, his team is furthering the science of osseointegration and making good on the MHS commitment to providing life changing solutions for military amputees.

Serving during a time of numerous ongoing military conflicts resulting in numerous wounded service members, Dr. Forsberg considers himself to have spent a majority of his career during a time of war. As the MHS is tasked with delivering care to active duty service members, military retirees and their family members; and WRNMMC is charged with treating the lions' share of U.S. military amputee care, he has been at the epicenter of treating this population since 2005.

When Dr. Forsberg initially began hearing about osseointegration, its usage in prosthetics was uncommon in military medicine. That was until his colleague, U.S. Army Lt. Col. (Dr.) **Kyle Potter**, current Director of Surgery (and former Director of the Musculoskeletal Oncology and Orthopedic Research Department) at WRNMMC, said it was time to establish their own osseointegration program.

They then began a campaign to establish an osseointegration program. With the collaboration of U.S. Navy Rear Adm. (Dr.) **Elaine C. Wagner**, Chief of the U.S. Navy Dental Corps, Drs. Forsberg and Potter were able to move this initiative forward. The DoD Osseointegration Program was initiated in 2015.



Dr. Jonathan Forsberg

As part of the MHS, the Defense Health Agency (DHA) funds a network of military hospitals and tertiary clinics including WRNMMC to take care of amputees. It was through a center in California, and a connection to the “father of osseointegration,” that Dr. Forsberg learned the science. Partnering with Dr. **Rickard Brånemark**, son of Per-Ingvar, the two spearheaded efforts at the University of California at San Francisco to make this technology in medical prosthetics available in 2016. They developed a revolutionary approach using the Osseoanchored Prosthesis for the Rehabilitation of Amputees (OPRA) implant, an alternative to traditional prosthetic sockets in that the external prosthesis is anchored directly to a patient's remaining bone through a permanently implanted transcutaneous titanium screw.

As Director of the DoD program, Dr. Forsberg and the other program steering committee members serve as subject matter experts and further their research in different but related areas. At the Office of Naval Research (ONR), Dr. Forsberg is partnering with Dr. **Liming Salvino**, a program officer in its Warfighter Performance Department, to develop “smart” implants: Monitoring Osseointegrated Prostheses (MOIP) and structural health monitoring. MOIP tracks temperature, pH and tissue resistance and alerts the patient to possible infections, with the goal of their prevention and eradication. These parameters are measured in both the osseointegrated prosthetic and the

residual limb via sensors in devices similar to those used in military vehicles and equipment.

Dr. Forsberg is also working with **Anthony Atala**, MD, from Wake Forest Institute for Regenerative Medicine and **Mark Ehrensberger**, PhD, from SUNY Buffalo who serve as steering committee members of the DoD program. Their efforts are to lay more ground work for a larger integrated effort to understand and incorporate the complementary research technology the DoD is evaluating that will provide for continual improvement of osseointegrated technologies going forward.

An important outcome of Dr. Forsberg's work has been the development of an international registry of osseointegrated prosthetic patients where the progress of patients can be followed over time. Since a single approach is not applicable for all patients, the purpose of the registry is to gather information on similar osseointegrated prosthetic work conducted by others in the medical field, and store more than just a written narrative about the patient, including updated x-rays and clinical images.

Currently, Dr. Forsberg is continuing to partner with Dr. Brånemark to facilitate two ongoing U.S. Food and Drug Administration (FDA) clinical trials involving patients with transhumeral and transfemoral amputations using the OPRA implant.

"It looks a lot like a large dental implant fitted in a femur and decreases time between the typical stage 1 implant and stage 2 from six months down to three months."

According to Dr. Forsberg, transhumeral patients have seen the most dramatic results in terms of the increase in their

range of motion and the amount of time they can wear osseointegrated prosthetics. A resulting benefit is targeted muscle control, which helps patients control the prosthetic. The next step is to study how regeneration through the activation of the gene RPN1 can offer artificial sensory feedback, where patients can actually feel what they are picking up.

"This is really pushing the envelope on behalf of our soldiers, sailors, airmen and Marines," says Dr. Forsberg.

For transfemoral amputations, prosthetics is still catching up where a simple bone anchored device in patients can tell the difference between surfaces, or osseoperceptions, and a sense of proprioception (the ability to sense where something is located without looking). In 2018, Dr. Forsberg's research is still working out the risk profile and investing in implant designs.

"This work is now where the dental field was in the early 1980s with oral implants. It's a very exciting time in this domain of patient care."

Dr. Forsberg will be the Keynote Speaker of the Academy of Osseointegration's (AO) 2019 Annual Meeting, where he will present "What Have We Learned in Orthopedic Osseointegration?", which will feature the work of the DoD Osseointegration Program, and discuss the correlations of osseointegration between the dental application and extremity surgery.

"It will be an honor to present to my colleagues in the dental profession, which has already so successfully embraced osseointegration in the realm of patient rehabilitation," he says.



Internationally recognized husband-and-wife research team: an implant dentistry success story

Academy News Editor Dr. **Harriet McGraw** recently had the opportunity to sit down with Academy of Osseointegration (AO) members and internationally award-winning researchers from the University of Michigan School of Dentistry, Drs. **Daniela and Gustavo Mendonça**.

Daniela most recently received the International Association for Dental Research (IADR)/Academy of Osseointegration Innovation in Implant Sciences Award this past summer. The award, which provides a \$75,000 grant to the research institution of the annual recipient, has been funded in full by AO for eight consecutive years.

Gustavo also was bestowed this award in 2015 and received the Osseointegration Foundation Basic Science Research Grant in 2011, given out annually to support clinical and basic scientific investigation in the field of dental implants. She will present "Titanium Surface Topography Effects on Osseointegration in Osteoporosis" during the opening symposium of AO's 2019 Annual Meeting.

This interview begins with Daniela discussing her current research project for which she received the 2018 IADR/AO award.

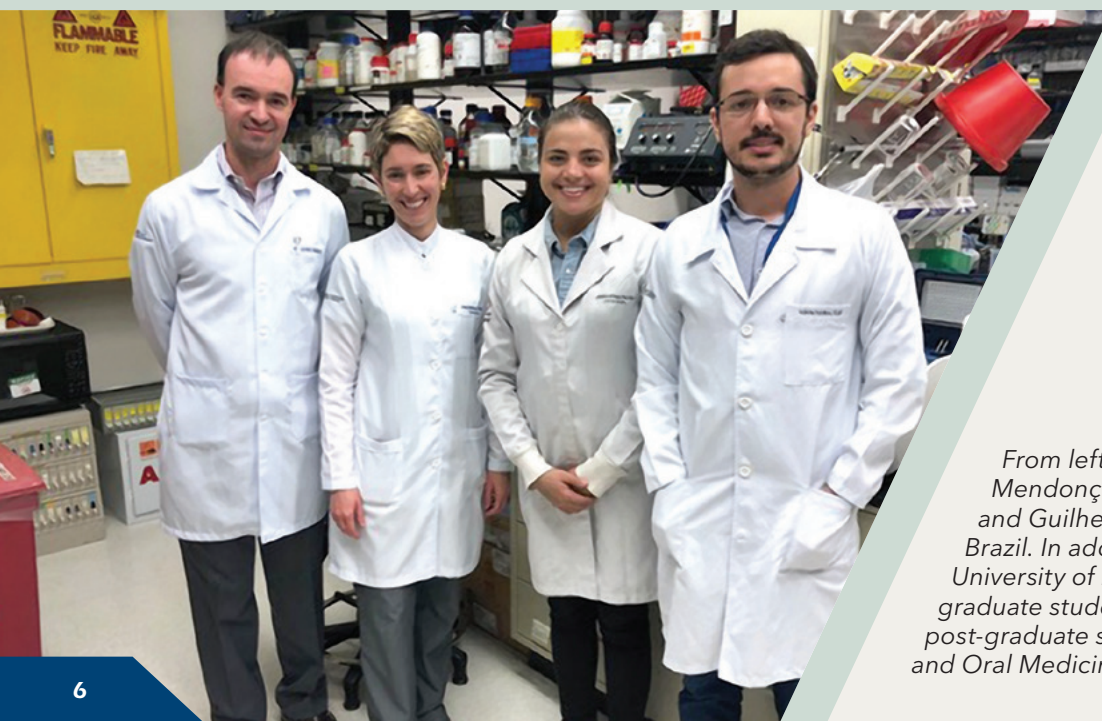
DANIELA

HKM: Please elaborate on the nature of your research, how it relates to implant dentistry and your next steps in that regard.

DM: With the increase in life expectancy, the number of elderly patients seeking treatment with dental implants has increased in recent years. Concomitantly, a greater number of these patients are expected to suffer from chronic metabolic diseases, like osteoporosis, which affects bone healing and may lead to implant failures. In our study, "Effect of Nanotopography on Cell Population and Differentiation in Osteoporosis in vivo," we propose to investigate how titanium topography affects osseointegration in an osteoporotic mouse model in vivo. Our hypothesis is that surface topography affects osseointegration in cases of poor bone quality (osteoporosis).

To test this hypothesis, experiments will be conducted on a mouse model to determine the influence of nanotopography on the profile of cells by using single-cell genomics to precisely determine cell population. Also, an osteoporotic mouse model will be used to evaluate the effect of osteoporosis on cell population and the related effect of titanium surface topography. An immediate outcome of this study will be a better understanding of the osseointegration process and how nanotechnology affects different cell populations during early osseointegration stages.

Continued on page 8



From left, Drs. Gustavo and Daniela Mendonça are pictured with Jessica Ferreira and Guilherme Moura, PhD, students from Brazil. In addition, the research team from the University of Michigan includes Rafael Siqueira, graduate student, periodontics; and Iya Ghassib, post-graduate student, Department of Periodontics and Oral Medicine (not pictured).

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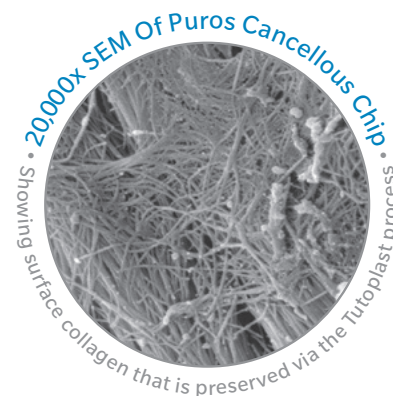
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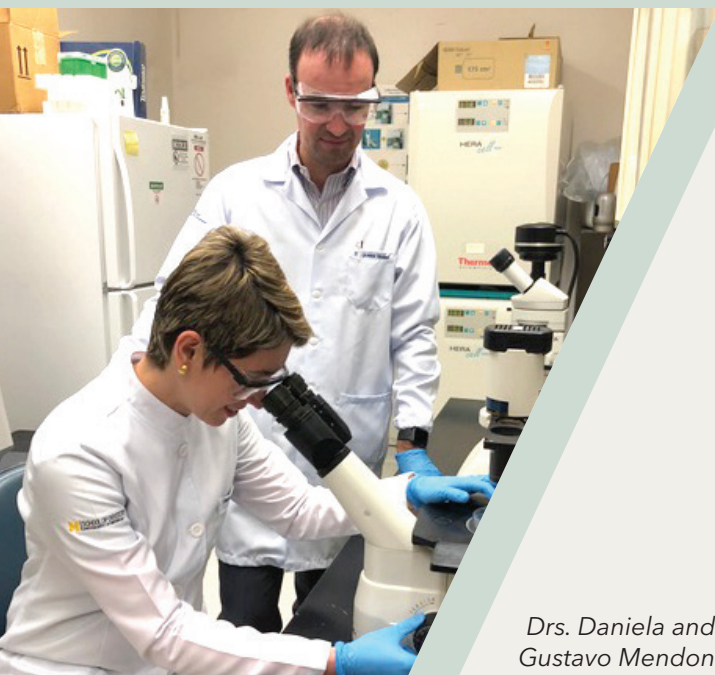
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*Drs. Daniela and
Gustavo Mendonça*

Studies that address mechanisms influencing osseointegration will enhance the understanding of mesenchymal stem cell differentiation and the potential relationship of gene expression to implant failure in osteoporosis. The important role of cell population in implant/cell interactions in osteoporosis needs to be investigated. In addition, our results could lead to the development of novel implant surfaces with a more direct effect on bone cells.

HKM: What motivated you to pursue a career in dentistry? How did you become involved in research?

DM: My mom is a periodontist in Brazil and her passion for dentistry motivated me to become a dentist. Before moving to the U.S., she and I worked together in private practice. Her love for her profession will always be an inspiration to me.

I started working in research related to implants during my undergraduate years in dental school. At that time, I worked in clinical research with Dr. **Flávio Neves**. Later in 2005, I started working in genomic sciences and biotechnology and in 2007 started my studies toward a PhD back in Brazil. Gustavo and I were fortunate to get a research scholarship from Brazil in 2007, which allowed us to move to North Carolina to work in the laboratory of Dr. **Lyndon Cooper**, who now practices in Chicago, IL. We feel very fortunate to have been able to work with such a renowned clinician / scientist, which, for sure, made a great impact on our lives and helped us immensely to get us where we are today.

HKM: What do you see from your perspective as a faculty member that students need in order to succeed in the field today?

DM: Students need to be engaged in the new technologies (i.e., digital technologies related to dentistry), without forgetting and learning basic principles (i.e. conventional impressions). The field is changing rapidly and proficiency in doing things with or without technology is extremely important. Students also need to apply critical thinking to be able to deliver the best treatment for their patients.

DANIELA & GUSTAVO

HKM: What role has the Academy of Osseointegration played in your careers?

DM/GM: The Academy of Osseointegration has allowed us to pursue our interest in research related to osseointegration by funding our research. AO meetings and publications provide a venue for us to present our research data and to collaborate with other researchers in the same field. Attending the AO Annual Meeting is a great way to get updated on the latest in implant dentistry, not only on the research aspect but also the clinical aspect.

Our research has also received several awards at AO annual meetings. Three awards for best oral research presentation and one for a Research Poster presentation.

HKM: Are there special relationships you have developed through AO?

DM/GM: Lyndon Cooper first introduced us to AO during our time in his laboratory. We attended our first AO annual meeting in 2008 to present research we had conducted in his laboratory. Attending the AO annual meetings and presenting our research data there has allowed us to meet many other clinicians and researchers involved in implant dentistry.

GM: Over the last few years I have had the chance to participate in different committees, mostly focused on research related to osseointegration. Participation in different committees provides a great opportunity to network with different members of the Academy and to get to know many other people who share our love and interest in this field.

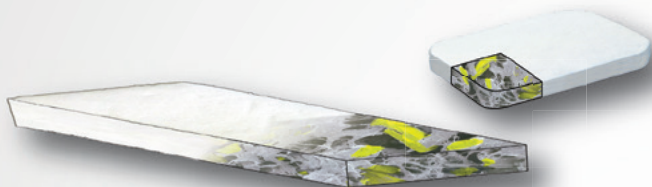
HKM: The University of Michigan School of Dentistry has a strong reputation in research. Was that a factor in both of you choosing to become faculty there?

DM/GM: Yes, for sure, being able to work at the University of Michigan School of Dentistry is a great privilege. The reputation of the University of Michigan and the support the School of Dentistry gives to do research is amazing and allows us to continue our careers focused on research and teaching.

HKM: Daniela and Gustavo, thank you for sharing your insights and experiences with the AO membership. We look forward to your continued contributions to the field of implant dentistry.

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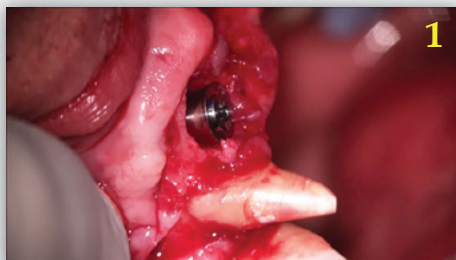
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Clinical Case Example



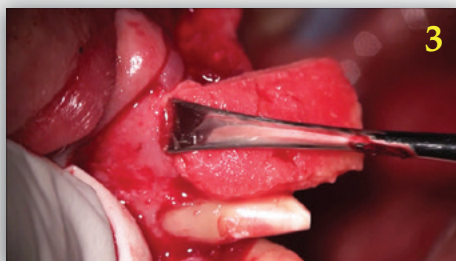
1 Implant is placed lingually following extraction. OsteoGen® Strip will be used to fill gaps and to reinforce the buccal wall

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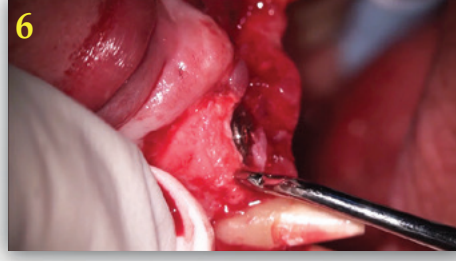
2 OsteoGen® Strip is hydrated with patients blood from the surgical site and, if desired, autologous serum or other growth factors prior to delivery

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With European focus, 2019 Annual Meeting program answers questions clinical teams ask every day

By Dr. Franck Renouard, 2019 Annual Meeting Program Chair

The goal of the 2019 Academy of Osseointegration Annual Meeting Program Committee has been to harmoniously blend science and clinical reality to answer the questions that all members of clinical teams ask every day, so that you will return to your practices refreshed, better informed, full of energy and enthusiasm for the challenges ahead.

The regional focus for this meeting will be Europe, and we are pleased to present a significant selection of Europe's finest speakers. The theme for AO's 43rd Annual Meeting is "Current Factors in Clinical Excellence." It will be held at the Walter E. Washington Convention Center in Washington, DC, March 13-16, 2019.

More than 60 speakers and moderators will be presenting this program. The chairpersons will be catalyzing the speakers to offer the best of their knowledge and experience during the panel discussions that will take place at the end of the plenary sessions. This meeting is a unique opportunity to meet to share our experiences.

The meeting begins on March 13th with several hands-on sessions and two half-day pre-conference courses, the first designed to prepare you for surgical complications and emergency situations, and the second to provide in-depth review of radiology for implant dentistry. These courses are designed to be comprehensive reviews and to fulfill some of the requirements for the AO Certificate in Implant Dentistry program.

Several topical themes will be discussed during the three days, beginning with Thursday afternoon's Opening Symposium, led by AO Past President and current *JOMI* Editor Dr. **Steven E. Eckert**, Byron, MN. Five important questions will be answered by five recognized experts: What can oral osseointegration learn from orthopedic osseointegration? Was implant dentistry not better and safer before? Can the scientific literature really help us improve our practice? Will the diagnostic tools of dentistry of the future be just computers, and is human behavior the key to success in implant dentistry? To answer this last question, who better than Dr. **Harold Pinsky**, Ann Arbor, MI, a colleague who divides his time between the chair of his dental office and the cockpit of a commercial aircraft as a captain?



Dr. Franck Renouard

Friday morning will begin with "Morning with the Masters," a privileged hour to meet, in a small venue, experts who will share their experience in areas of specialized expertise. Drs. **Mauricio Araujo**, Rio de Janeiro, Brazil; **J. E. Davies**, Toronto, ON, Canada; Steven Eckert; **German O. Gallucci**, Boston, MA; **William V. Giannobile**, Ann Arbor, MI; **Petra Gierthmühlen**, Duesseldorf, Germany; **Dennis Rohner**, Aarau, Switzerland; **Daniel B. Spagnoli**, Southport, NC; **Pascal Valentini**, Paris, France; and **Terry R. Walton**, Sydney, Australia, will cover a variety of topics, including sinus lift complications, bioengineering, and biomaterials used in implant prostheses. These sessions are designed to allow for direct interaction between the speaker and audience around core topics in implant rehabilitation.

In two Friday plenary sessions headed "10 Years After," very experienced clinicians will describe how they were doing particular surgeries or prostheses 10 years ago and how they do them today. They will explain why they have changed techniques, protocols or indications during these 10 years. The 10 years after topics include vertical ridge augmentation, augmentation using biologics, complex treatments, esthetic material, connecting or not connecting the implants. The 10 years after prosthetic and surgical tracks will be moderated by AO Past Presidents Drs. **Stephen M. Parel**, Dallas, TX; and **Edward B. Sevetz, Jr.**, Orange Park, FL.

Following AO's tradition of supporting research and innovation, the Oral Clinical Research session will be held Friday morning and the Oral Scientific Research and Clinical Innovations session Friday afternoon.

Friday afternoon, the Academy returns to the science that underpins implant dentistry by featuring sessions on peri-implant bone biology. Dr. **J.E. Davies** has the heavy task of organizing and moderating a session headed, "Osseointegration, Restoration of Homeostasis or Foreign Body Response?" This seemingly theoretical question is inescapable if we want to optimize outcomes and prevent complications. The three expert speakers – Drs. **Saso Ivanovski**, Herston, Queensland, Australia; **Rene Olivares-**

Navarrete, Richmond, VA; and **Omar Omar**, Gothenburg, Sweden – have prepared an excellent discussion on the bone biology and physio-pathology around implants.

Parallel to this session on bone, three teams of surgeons/prosthodontists will present the latest developments in complex maxillofacial rehabilitation, representing what is possibly the most challenging domain in the spectrum of implant dentistry. Dr. **Dennis Rohner** will moderate this session.

After the afternoon break, one session will address peri-implant soft tissue issues: What material should be used to manage the lack of keratinized tissue around implants? Can we consider materials replacing the connective tissue? What are the limitations to using soft tissues in establishing a healthy and aesthetic peri-implant environment? What is the future of regenerative medicine around implants? Drs. **Sofia Aroca**, Paris, France; **Daniel Thoma**, Zurich, Switzerland; and William Giannobile will each make their clinical proposals before debating them during the panel discussions under the direction of moderator AO Past President Dr. **Clarence C. Lindquist**, Washington, DC.

A second session is entitled, “Current Thought in Restorative Ceramics,” moderated by AO Past President Dr. **Russell D. Nishimura**, Westlake Village, CA. Drs. **Yu Zhang**, New York, NY; **Susanne Scherrer**, Geneva, Switzerland; and Petra Gierthmühlen will go through the indications and limitations of ceramic restorations on implants, presenting the advantages and defining the boundaries of their use in everyday clinical practice.

Saturday morning begins with an original session on the treatment of complete edentulism throughout the life stages. How to address anodontia in a child of 5 years? What precautions should I take to restore a 30-year-old patient who is completely edentulous? What are the rules for edentulous patients at age 60 and, finally, how to approach complete restorations in geriatric patients? The same presenting condition, but four completely different medical situations. Each has its own protocols and limits.

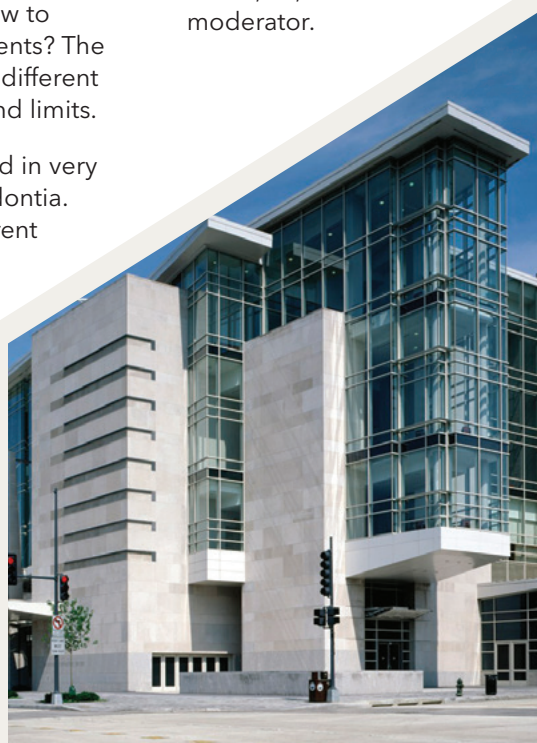
Contrary to popular belief, implants are indicated in very young children with significant agenesis or anodontia. A patient who has no teeth at 30 years has different periodontal, behavioral or medical risk factors than patients who are edentulous at 60 years of age who have experienced progressive deterioration of the oral structures. Patients known as “fourth age” have more and more frequently cognitive

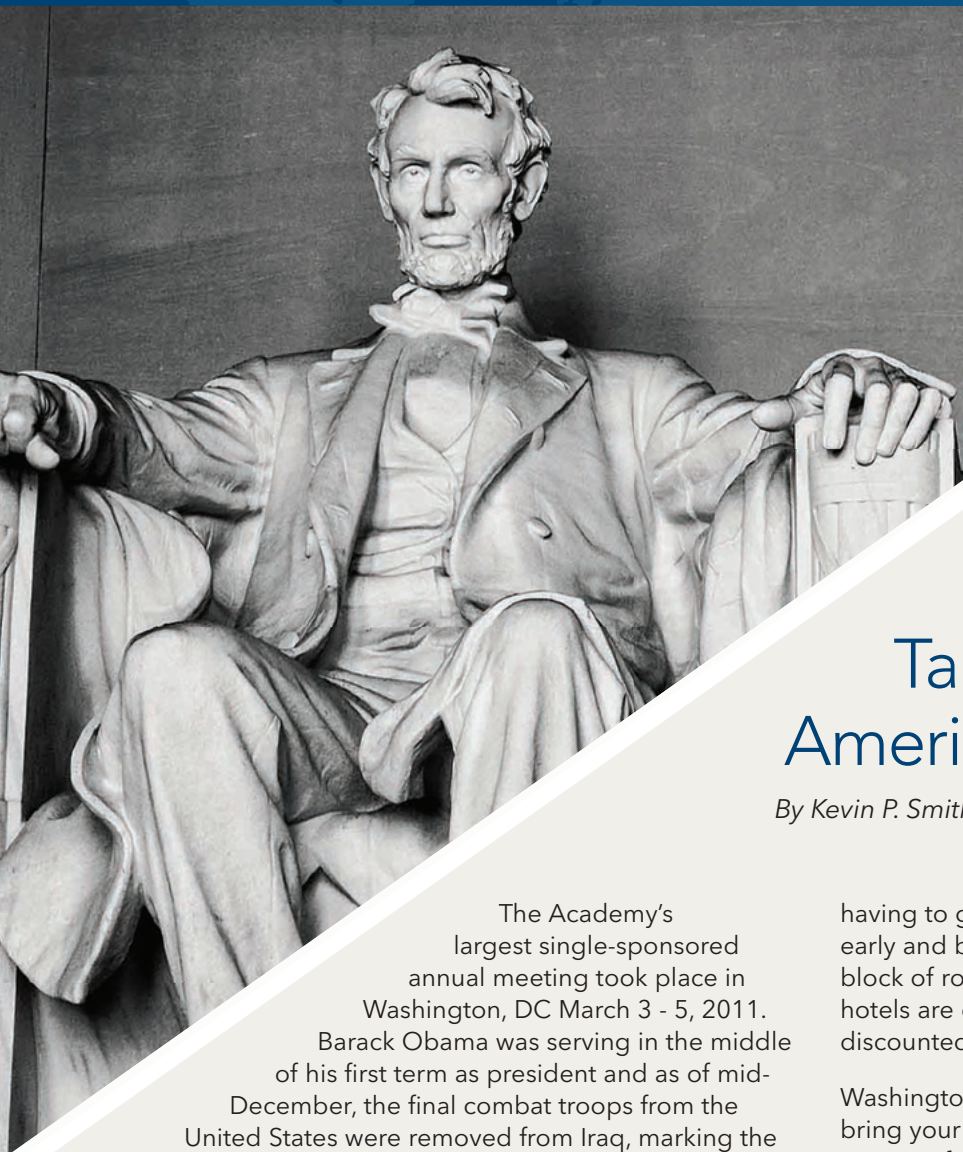
pathologies that force clinicians to adapt their therapeutic proposals. Drs. **Simone Heuberger**, Vienna, Austria; **Clark M. Stanford**, Chicago, IL; **William C. Martin**, Gainesville, FL; and **Frauke Müller**, Geneva, Switzerland, will be the four speakers of this session moderated by AO Past President Dr. **Steven G. Lewis**, Milford, OH.

After a break, all practitioners, whether they have a more surgical or more prosthetic orientation, will gather to hear Drs. **Klaus Gottfredsen**, Copenhagen, Denmark; **Patrick Palacci**, Marseille, France; and **Ghadeer N. Thalji**, Chicago, IL, discuss treatment planning through the latest knowledge in biomechanics. What about cantilever extensions, tooth/implant connections, implant diameter or the ideal number of implants? AO Immediate Past President, Dr. **Michael R. Norton**, London, England, UK, will moderate this session.

“Lunch with the Masters” on Saturday is an institution of the AO. Attendees will have the opportunity to dine and speak with global experts on varied topics, such as papillary regeneration techniques, the use of L-PRF in daily practice, digital technology and immediate loading. The number of participants is strictly limited, and it is recommended that participants register as soon as possible so as not to be disappointed.

The 2019 Program features an excellent closing session entitled, “Managing Clinical Complexity.” While the therapeutic proposals are always more complex and demanding of time and energy, can we offer treatments that respond to the trilogy: simpler, faster, cheaper? Drs. **Marco Degidi**, Bologna, Italy; **Marc Quirynen**, Leuven, Belgium; Daniel Spagnoli and German Gallucci are the four speakers for this session with AO Past President Dr. **Dayn C. Boitet**, Fleming Island, FL, as moderator.





Take time to visit America's capital

By Kevin P. Smith, MA, MBA, Executive Director

The Academy's largest single-sponsored annual meeting took place in Washington, DC March 3 - 5, 2011. Barack Obama was serving in the middle of his first term as president and as of mid-December, the final combat troops from the United States were removed from Iraq, marking the end of the war that began in 2003. Now, eight years later, the United States has a new president also serving in the middle of his first term and the U.S. Capital continues to be a center of world news. It's no wonder that Washington, DC is the most popular venue for international meetings, according to the ICAA statistics report.

The Walter E. Washington Convention Center, renamed in 2007 in honor of the District's first Home Rule Mayor, is the nation's seventh largest convention center and the home of the Academy's 34th Annual Meeting. It is as functional as it is artistically impressive. The 2.3 million square foot, energy efficient and ultra-modern structure features a soaring staircase, towering glass windows and houses its \$4 million public art collection, with over 130 pieces contributed by 93 different artists. It is the largest public collection of art in DC outside of a museum.

It's befitting that AO has designated the Marriott Marquis Washington, DC Hotel as its official headquarters hotel. This facility, which opened in 2014, is now the largest hotel in the city and the only hotel connected to the convention center through an underground pedestrian walkway. AO registrants can store their coats in their hotel rooms and comfortably navigate to the convention center without

having to go outside. We urge our members to register early and book their rooms at the Marriott as we expect our block of rooms to sell out fast; however, AO's other meeting hotels are close by and all AO hotel room prices are heavily discounted for registrants and guests.

Washington is an exciting place to visit. You may want to bring your walking shoes and hit the sidewalks, as the District of Columbia is a location that truly captures the excitement and bustle of a thriving metropolis. World class restaurants, monuments, museums, entertainment and shopping are all within walking distance. For longer jaunts, the Metrorail is the convenient way to go. The system consists of six lines and 91 stations and services most of the city and all major suburbs. The Walter E. Washington Convention Center even has a dedicated Metro station serviced by the Yellow and Green lines.

The National Mall, America's most visited national park, surrounds the Washington Monument, with the U.S. Capitol Building at one end and the famous Lincoln Memorial at the other. Take time to tour the mall and visit its magnificent memorials:

- The **Korean War Veterans Memorial**, dedicated in 1995 on the 42nd anniversary of the armistice that ended the conflict, consists of 19 statues of soldiers representing a squad on patrol, drawn from each branch of the Armed Forces, creating a reflection on the wall, symbolizing the border between North and South Korea: the 38th parallel.
- The **Jefferson Memorial**, a symbol of liberty, was designed as a smaller version of the Roman Pantheon

Continued on page 14



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with marble steps and granite columns; its interior holds a bronze statue of Jefferson and the walls are inlaid with excerpts from his letters, speeches, and the Declaration of Independence, of which he was the principal author.

- The **Vietnam Memorial** honors members of the U.S. Armed Forces who died in service or were listed MIA during the Vietnam War. It is divided into three separate parts: Three Soldiers statue, the Vietnam Women's Memorial, and the well known Vietnam Veterans Memorial Wall.
- **Dr. Martin Luther King's Memorial** pays tribute to the famous American pastor, activist, humanitarian, and best known leader in the civil rights movement. The memorial depicts Dr. King's famous message: "With this faith, we will be able to hew out of a mountain of despair, a stone of hope."
- The **National World War II Memorial** honors the spirit and sacrifice of the 16 million men and women who served overseas during the war and the more than 400,000 who perished. It remains one of the most visited sites on the National Mall, with more than 4.2 million visits each year.
- The **Washington Monument**, built to honor George Washington, is the world's tallest freestanding stone structure. Construction began in 1848, but lack of funds and the Civil War halted the progress. The lighter colored stones, brought in from a different quarry following the Civil War, illustrate the timespan of construction.
- The **Lincoln Memorial**, dedicated in 1922, represents a 19-foot sitting statue of Abraham Lincoln, America's 16th president, overlooking the Reflecting Pool and the Washington Monument. It showcases many of his best known words, including the Gettysburg Address.

The National Mall is much more than America's dedication to its history through stone structured memorials. East of the Washington Monument are world class museums with something for everyone. The **National Gallery of Art** has a six acre sculpture garden and contains a rotating display of permanent works and traveling exhibitions. The Portrait Gallery, DC's landmark Greek Revival building, is one of the oldest federal structures in the city. Opening in 2019, a special dedication of the United States' centennial anniversary of the ratification of the Nineteenth Amendment, "Votes for Women: A Portrait of Persistence," will be featured. The exhibition examines the contributions of the radical women in antislavery societies; women activists of the late nineteenth century; the "New Woman" of the turn of the century; and the militant suffragists of the 1910s.

U.S. Botanic Gardens houses a living, indoor-outdoor museum with an impressive collection of plant life within the 19th century hothouse conservatory

and the famous butterfly garden. The **National Air and Space Museum** features the world's largest collection of historic aircraft and spacecraft, including Charles Lindbergh's *Spirit of St. Louis*, the Wright brothers' original 1903 flyer, astronaut space suits, lunar space capsules and a lunar rock sample, just to name a few.

The **United States Holocaust Memorial Museum** contains artifacts, videos and personal stories in the Permanent Exhibition that will create a searing memory. Admission to the museum is free, but entry to the Permanent Exhibition is done via timed pass. You can reserve online beforehand. Special exhibitions do not require a timed pass.

Save visiting the **National Museum of Natural History** for Friday evening when all registered attendees receive complimentary admission and transportation to the **site of the Academy's President's Reception**. It is no wonder this museum is the most visited natural history museum in the world. It boasts an incredible rotating collection of 127 million items, including dinosaur bones, the Hope Diamond, ancient Egyptian mummies, and so much more.

Over four million people visit the **National Museum of American History** each year. The museum's collection includes more than three million objects that tell the American story. Among these, a few crowd favorites include the flag that inspired the "Star-Spangled Banner," the Greensboro lunch counter, Julia Child's kitchen, Dorothy's ruby slippers from *The Wizard of Oz*, and Abraham Lincoln's stovepipe hat.

One of the more recent permanent additions to the National Mall, the **National Museum of the American Indian**, expresses the diversity of culture, language, history and the tradition of native peoples of North and South America. The **National Museum of African American History and Culture** is DC's newest museum, opening in September 2016. It is devoted to African American life, art, history and culture and is the only national museum devoted exclusively to the documentation of African Americans.

So, plan to attend the Academy's 34th Annual Meeting and bring the family and friends to enjoy this world class American city. There is something for everyone!



Academy holds Quadrennial scientific Summit to determine risk factors for predictable osseointegration

"This could be considered one of the strongest Summits the Academy of Osseointegration (AO) has ever held," said Dr. Clark M. Stanford, chair of "Optimized Patient Care, Converting Osseointegration to Patientintegration," a three-day scientific conference held August 8-10, 2018 at the Oak Brook Hills Resort in Oak Brook, IL.

According to Dr. Stanford, AO vice president and distinguished professor and dean, College of Dentistry, University of Illinois at Chicago, the purpose of this Quadrennial Summit was to address the issues of implant healing and force mechanics, inflammation and mucosal healing. Its driving question was finding out if there may be elevated risk factors attributable to local or systemic issues, as recent literature suggests.

"As more clinical experience is obtained from oral implants having been in patients' mouths longer, either because they were in place for many years or because patients are literally living longer, we are seeing late-term complications that need to be considered," he said.

Participants discussed three questions for the Summit, researched and presented by one of three work groups. Framed around outcomes or impact on long-term osseointegration, the questions addressed: Primary Stability and Osseointegration (OI) by Group 1; Inflammation and OI (Group 2); and Systemic Health, Medications and OI (Group 3).

Leading the groups were chairs Drs. **John B. Brunski** (Biomaterial/Bioengineering), Stanford, CA (Group 1); **Joseph P. Fiorellini** (AO director and periodontist), Philadelphia, PA (Group 2); and **Tara L. Aghaloo** (AO secretary, oral and maxillofacial surgeon), Los Angeles, CA (Group 3).

After meeting during their respective breakout sessions, each of the chairs provided an overview of their group's outcomes, arranged for a 60-minute plenary presenter and a clinical presentation for the entire audience. A moderated and dynamic discussion followed the plenary speakers and the clinical case presentations.

"The dialog was respectful, positive and supportive of the goals and aims of the Summit," said Dr. Stanford.

The plenary presenters were Drs. **D. Rick Sumner**, **Mary Lou Bell McGrew** Presidential Professor for Medical Research and chair of the Department of Cell and Molecular Medicine at Rush University Medical Center in Chicago (for Group 1); **Flavia Teles**, associate professor, Department of Microbiology, University of Pennsylvania School of Dental Medicine (Group 2); and **Susan Bukata**, orthopedic surgeon, Ronald Reagan University of California at Los



Among the AO and Summit leadership attending the 2018 Summit were (from left): Drs. James C. Taylor, AO president; Joseph P. Fiorellini (AO director and Group 2 Chair); John B. Brunski (Group 1 Chair); Tara L. Aghaloo (AO secretary and Group 3 Chair); and Clark M. Stanford, Summit chairman and AO vice president.

Angeles (UCLA) Medical Center, Department of Orthopedic Surgery, Santa Monica, CA (Group 3).

Other members of the 2018 Summit planning/steering committee included: Drs. **Lyndon F. Cooper** (prosthodontist), Chicago, IL; AO Vice President **Jay P. Malmquist** (oral and maxillofacial surgeon), Portland, OR; and **Homayoun H. Zadeh** (periodontist), Los Angeles, CA.

Case presentations were provided by AO immediate past president Drs. **Michael Norton**, London, England for Group 1; **Hector Sarmiento**, New York, NY for group 2; and **Joan Pi-Anfruns**, Los Angeles, CA, group 3. The cases were presented to illustrate issues raised in preliminary reviews made by each group.

The invitation only event attracted nearly 70 AO members across dental disciplines from around the globe, and representatives from other professional member dental organizations, the American Association of Oral and Maxillofacial Surgeons, the American Academy of Periodontology and the American College of Prosthodontists.

Results of this Summit, including three position papers (one authored by each of the work groups on their respective topic) are anticipated to be published in 2019 as a special edition of the *International Journal of Oral and Maxillofacial Implants (JOMI)* - the official journal of AO.

AAP honors AO Director Dr. Hom-Lay Wang



Dr. Hom-Lay Wang

Academy of Osseointegration (AO) Director Dr. **Hom-Lay Wang**, Ann Arbor, MI, is the recipient of the 2018 William J. Gies Periodontology Award, bestowed by the American Dental Education Association's William J. Gies Foundation for the Advancement of Dentistry for outstanding contributions to the field of periodontology. This award was presented to Dr. Wang at the American Academy of Periodontology's (AAP) 104th Annual Meeting. Dr. Wang, the endowed collegiate professor of periodontology at the University of Michigan School of Dentistry has also served as the director of the graduate periodontal program for more than 20 years, published more than 130 scientific abstracts, 25 book chapters, and over 500 scientific articles, and has more than 25,000 citations to his credit, making him "a proven veritable authority in the specialty," according to the award.

AO events and CE calendar



2019

January 23

Post Graduate Event at Howard University:
"Management of Bone Loss Around Implants"
Mehrdad Favagehi, DDS, MS

January 25

Hellenic Association of Oral and Maxillofacial Surgery (HAOMS) Meeting, Greece
Fouad Khoury, Prof, DMD, PhD (Germany),
Daniele Cardaropoli, DDS (Italy),
Fernando Rojas Vizcaya, DDS, MS (Spain)

March 13-16, 2019

AO 34th Annual Meeting: "Current Factors in Clinical Success"
Walter E. Washington Convention Center, Washington, DC

Bone Grafting and Implant Support

Trephine Burs



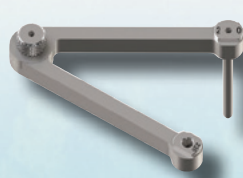
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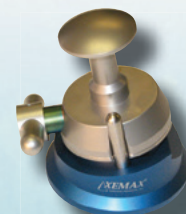
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*Hoganson DM, Owens GE, O'Doherty EM, Bowley CM, Goldman SM, Harilal DO, Neville CM, Kronengold RT, Vacanti JP. Preserved extracellular matrix components and retained biological activity in decellularized porcine mesothelium. Biomaterials. 2010, 27: 6934-6940.



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6 keys to team stability

By Robert Levine, DDS, FCPP, FISPPS
Academy News Guest Contributor

I cannot take all the credit for the 6 Keys. They were adopted as part of my practice philosophy over the past 30 years after attending a number of Dr. **Frank Spear's** seminars, where he shared his thoughts on providing successful interdisciplinary "team" treatment.

The following keys are adopted by the entire interdisciplinary team. All who come into contact with a mutual patient ascribe to the same principles. Team members include the implant surgeon, restorative dentist, dental hygienist, dental assistants, dental implant representative and dental laboratory technicians:

- 1 Quality of patient care is paramount.** Each member of the team is committed to doing the best work; even if it means we redo something at no cost to the patient to get the result we all want.
- 2 There is always potential for variations in final results.** Factors affecting final results include: ease or difficulty in working on a particular patient; how a patient heals; patient compliance; and a clinician's skill level.
- 3 Clearly defined expectations of one another.** Communicating what is and is not possible amongst interdisciplinary team members keeps the team focused on a common treatment goal with the patient's best interest as the major focus.
- 4 Accepting the fact that individual team members have greater expertise in their specific field.** If we are working a complex case in an interdisciplinary fashion involving multiple specialists (e.g., endodontics, orthodontics, etc.), their individual opinions are most valued in making a final decision that involves their expertise.
- 5 Each team member accepts responsibility for the treatment they render.** If, during the course of treatment, a team member notices an area that needs correction by another member of the team, we all know we can call that clinician and have confidence the problem will be managed by them directly with no ands, ifs or buts!
- 6 Respect for one another and a commitment to the team relationship.** When things do not go as planned, we do not abandon the team. Rather, we take the opportunity to learn from the experience, so as to improve future outcomes. We are always trying together to improve this relationship. Who always benefits is the patient!

Teams outperform individuals, especially when performance requires multiple skills, judgement and expertise. The process becomes seamless for the patient as everyone is on the same page...like a symphony. When a patient has this "seamless" experience in our offices ("symphony in action") regarding their individual care, they are most appreciative and truly value their patient-centered care. The above "6 Keys" is a blueprint for practice success as well as self-satisfaction in our profession.

Dr. **Robert Levine** is a periodontist and AO Fellow from Philadelphia, PA.



Dr. Robert Levine

A Question of Reality

By Harriet K. McGraw, DDS

A recent article in the *Wall Street Journal* by Erica Komisar, a psychoanalyst, caught my attention: "Therapeutic Narratives Needn't Be Factual." She writes, "When a patient tells me a story, I don't test it to see if it's objectively accurate. I may help patients see things from a different perspective, but I never doubt the reality of what they are saying... The therapist's job is to empathize with and believe those in pain." That is no different than our role as oral health care providers.

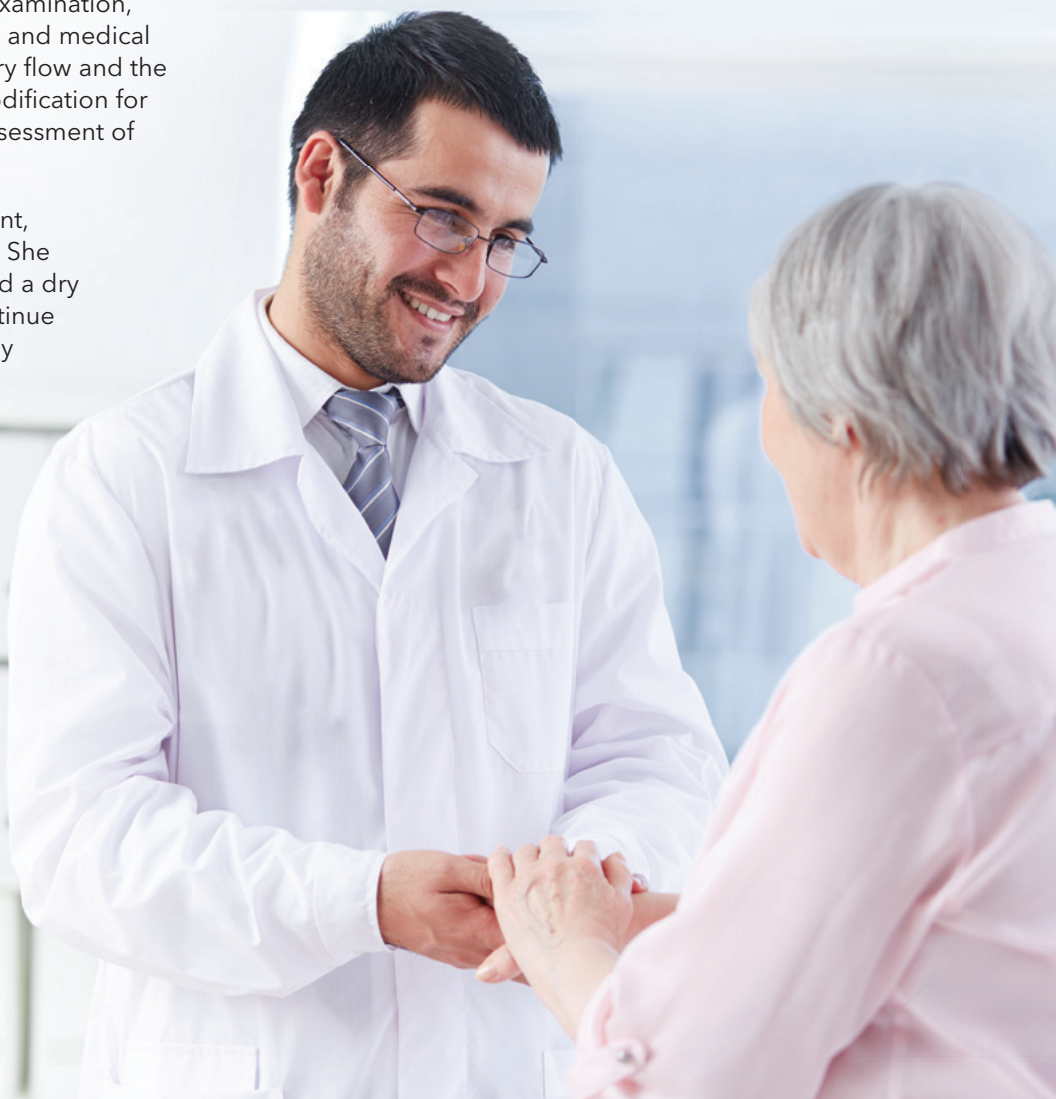
A patient I met over 25 years ago came to me seeking care for her long-neglected dental needs. She was a retired nurse who reported having Sjogrens Syndrome. I suspect she had read-up on the syndrome and concluded she had xerostomia, a common side effect. As a result, she carried a water bottle with her at all times. It was not my job to question her reality but to provide care consistent with the findings from a comprehensive examination, including a thorough review of her dental and medical histories. Clinically, there was good salivary flow and the treatment plan did not require special modification for a dry mouth. I did not dispute her own assessment of her condition.

When it came time to commence treatment, Bev was scheduled for an entire morning. She presented quite distraught, saying she had a dry cough and was convinced she would continue coughing during treatment. I very patiently and calmly reassured her that I would be happy to stop whenever she needed to cough or drink water. Her fear was real and it was not for me to try to convince her otherwise. Over the course of four hours, treatment was stopped once; within the first five minutes, when she was brought forward in the dental chair, given some water and reassured that she would be given breaks, as needed. Bev is a patient to this day. She has confidence in my treatment recommendations.

Our first responsibility as clinicians is to do no harm. Patients' fears and anxieties may seem unfounded to us as dentists. However, to them, they are very real. When treatment would

not be compromised and no harm would result in doing so, validating patients' feelings can go a long way toward treating them as a whole. To paraphrase Erica Komisar, "Along the way, I may help patients see things from a different perspective."

The Editor's Editorial is intended to contribute to the dialogue on issues important to implant dentists. The views expressed in the editorial do not necessarily reflect the policy of the Academy of Osseointegration or its Board of Directors. Readers who would like to comment or express a point of view on the editorial are invited to write to the editor via email at hkmcgraw@me.com. We will endeavor to publish pertinent comments or views when space permits.

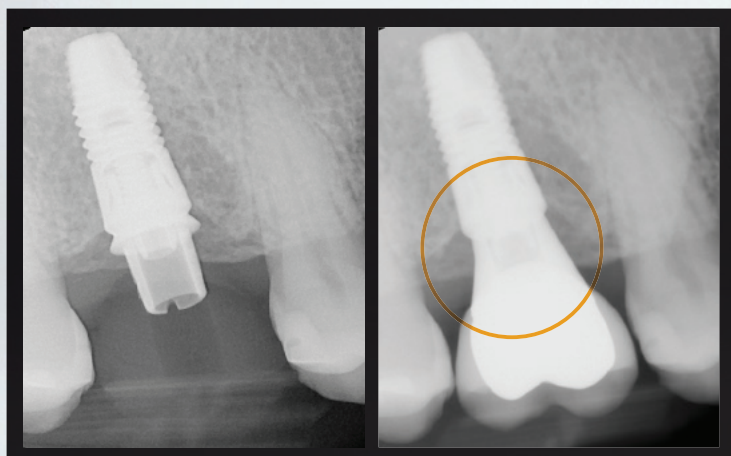


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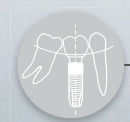
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