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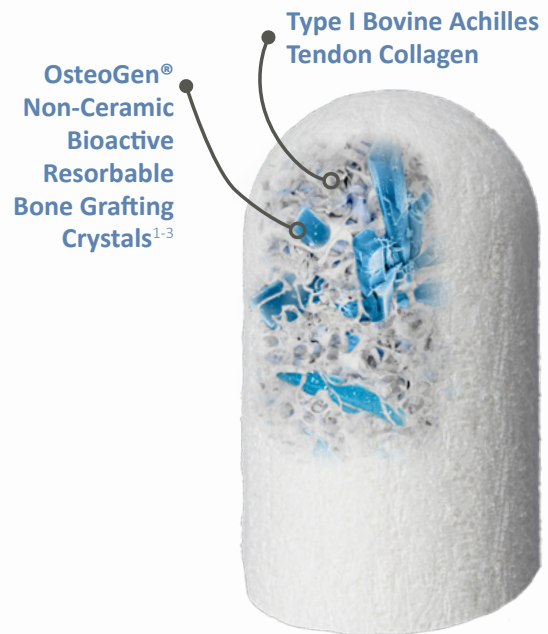
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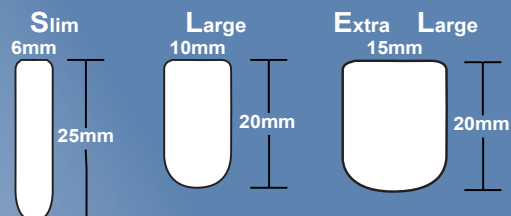
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ACADEMY NEWS

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President's Message

How collaborative research transforms patient care in implant dentistry

By AO Fellow and Diplomate Robert C. Vogel, DDS

Scientific research is the necessary foundation of true advancement. It's become tempting to view technique videos on social media platforms and assume they represent sound, repeatable practice rather than mere anecdotal evidence. To ensure predictable, ideal care, bringing real science to clinical reality must be the goal.

A mission of the Academy of Osseointegration is to serve as the conduit for this transformation. By bringing together scientists, educators and clinicians, we can achieve the ultimate goal of ideal patient care. Over the past year, collaboration between AO and AAP brought together leading minds in a consensus conference led by Drs. **Hom-Lay Wang** and **Paul Rosen**, resulting in the soon-to-be-published "Prevention and Management of Peri-Implant Diseases." These current guidelines for clinical practice will be found in our official journal *IJOMI* and made available to all.

Addressing current topics with sound science and producing clinical guidelines gives us the opportunity to provide patients long-term stability and minimize potential complications. With rapid advancements in science and technology in our profession, it is critical to continue this mission. Techniques and components we learned in training soon become outdated, and the

Academy of Osseointegration is already working on a Prosthetics Summit to investigate and produce guidelines on topics such as occlusion in implant dentistry.

Between consensus conferences and summits, our revitalized Social Media Committee – thanks to Dr. **Joseph Kan** – led by Drs. **Jayden Li**, **Alex Lin**, **Stephanie Young** and **Robert Levine**, constantly works to review and post scientifically relevant clinical papers on the AO social media platform for all to see.



The culmination of work from our researchers, educators and world-class clinicians is on display at the AO Annual Meeting every year. This is where meticulously selected current topics and presenters provide reliable, repeatable, clinically important presentations that allow us to have the most ideal impact on our patients' lives. In addition to leaving with knowledge that enables us to provide ideal care, we also have the opportunity to meet, share and create friendships with like-minded professionals from around the world. Also, the ability to see, touch and experience the latest products from our sponsors in real life is something not possible by scrolling at home.

So be there, become the expert in your community and have some fun, too – it's allowed. See you March 5-7 in Washington, D.C.



Dr. Robert C. Vogel



Artificial intelligence in implant dentistry: A commentary on promise and precaution

By Jinlong Shao, BDS, MSc, PhD

Artificial intelligence (AI) is rapidly gaining attention in implant dentistry. Methodologies like deep learning, machine learning and convolutional neural networks (CNNs) are enabling computers to “see,” “understand” and “learn” from dental images and data in ways previously exclusive to human experts. The advent of automated machine learning tools further bridges the gap between advanced AI technology and clinical practice, allowing even non-experts to develop and deploy high-performing models. This commentary will summarize the significant advantages and inherent challenges of AI in implant dentistry.

1.0 The Transformative Potential of AI in Implant Dentistry

AI is poised to revolutionize implant dentistry by significantly enhancing several critical stages of treatment, from diagnostics to surgical precision, and even extending into education and practice management.

1.1 Enhanced Clinical Capabilities

AI is dramatically improving diagnostic accuracy. It empowers dentists to interpret radiographic images with unprecedented precision and detect early signs of disease. AI models, particularly CNNs, have shown high accuracy (more than 78.6%) in identifying peri-implant pathologies and a remarkable range of 67% to 99% in dental implant classification. This capability minimizes human error and leads to earlier, more precise identification of issues. Notably, AI's ability to identify implant types in 2D images often surpasses human accuracy, providing an invaluable tool for clinicians.

Building on this diagnostic power, AI plays a pivotal role in implant treatment planning. Extensive research highlights AI's capacity for automated identification and classification of dental implants from radiographs, sophisticated segmentation of anatomical structures for precise planning, and even predicting implant success and

Continues on page 6

optimizing implant design. AI's prowess in analyzing large datasets from CBCT scans and panoramic radiographs is a major driving force, offering increased accuracy and efficiency compared with conventional methods. In the AO 2025 annual meeting, the best clinical innovation award was awarded to the study of AI models for automatic segmentation of mandibular canals and their branches, and underscores the future value of these techniques for clinicians.

Furthermore, AI contributes to improved treatment execution and personalized planning. It assists in surgical implant planning by providing crucial guidance for optimal implant placement and angulation, as well as expertly helping to avoid critical anatomical structures like the sinus or mental foramen. AI also aids in predicting marginal bone loss (with a mean accuracy of 93%) and assessing potential outcomes for osseointegration and overall implant success. By analyzing vast amounts of patient data, including 2D and 3D imaging, AI can craft highly customized treatment plans, predicting how implants will integrate with bone, optimizing their placement and angulation, and assisting in the design of restorations that perfectly replicate natural morphology. This also extends to assessing risk factors for implant failure, enabling proactive preventative measures. Lastly, AI is driving enhanced surgical precision. While still an evolving area, AI in guided surgery shows promising accuracy (more than 94%) and precision (more than 87%), holding significant potential to reduce deviations from planned trajectories and substantially improve surgical outcomes.

1.2 Advances in Dental Education and Patient Communication

Beyond direct clinical applications, AI is significantly impacting dental education and patient engagement. In education, AI is driving accelerated learning and training, with AI-powered adaptive learning systems personalizing content to individual student needs, fostering a deeper understanding of complex material. AI's ability to interpret radiographs allows students to make more precise diagnoses, while AI-based large language models (LLMs) such as ChatGPT-4 have demonstrated strong performance in answering dental exam questions, offering a powerful study aid. This extends to realistic simulation and training, where AI-enhanced simulation and virtual reality (VR) create highly detailed virtual environments. Here, students can practice procedures in a risk-free setting, receiving real-time feedback and experiencing a vast array of clinical scenarios, including interactions with AI-created virtual patients.

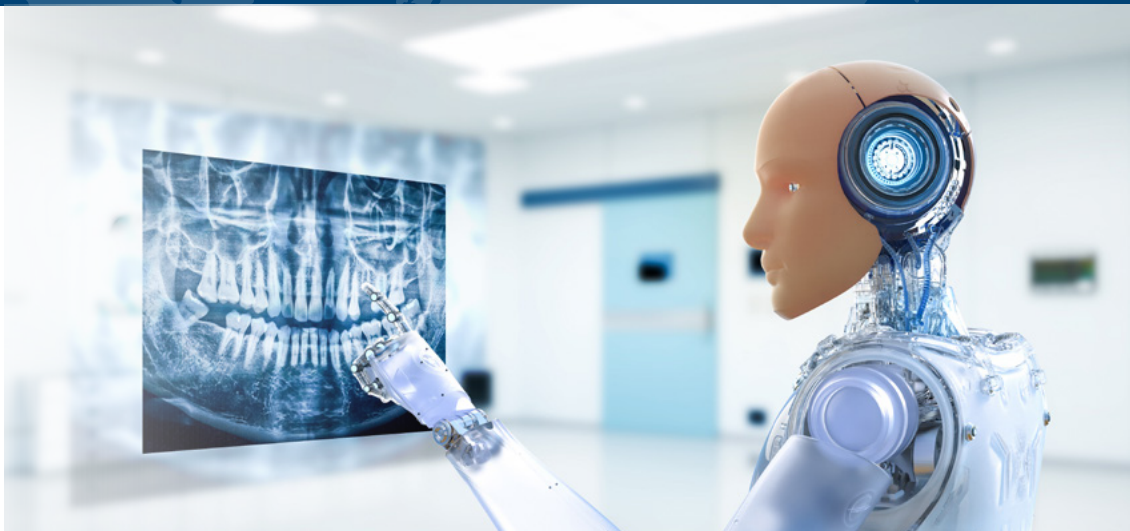
For patients, AI is dramatically improving engagement and communication. AI-driven tools enhance patient understanding by transforming intricate radiographic data into clear, color-coded visuals, allowing patients to easily visualize their conditions and proposed treatments, thereby fostering trust and increasing case acceptance. A particularly notable emerging area is the application of AI-powered chatbots and LLMs in both dental education and direct patient communication. Research is actively evaluating their performance in accurately answering dental implantology inquiries, even successfully tackling certification exams. This strongly suggests a future where AI will play a significant role in disseminating information to both students and patients, potentially enhancing understanding and democratizing access to knowledge. However, ongoing research meticulously evaluating the quality and empathy of these AI interactions highlights a crucial awareness of the nuanced nature and irreplaceable value of human interaction in health care.

1.3 Advances in Practice Management

AI is poised to significantly streamline administrative tasks and enhance practice management. It automates routine administrative functions, including efficient patient scheduling, timely appointment reminders and comprehensive revenue cycle management, thereby significantly reducing the potential for human error. Furthermore, AI enhances electronic health record (EHR) management by intelligently suggesting diagnoses, accurately analyzing radiographic images for pathologies and enabling hands-free documentation through voice recognition. In financial management, AI streamlines complex billing procedures, optimizes payment collection and accelerates insurance claim processing. This automation across various administrative domains allows dental professionals to dedicate more focus to direct patient care, maintaining high standards and improving overall operational efficiency. Beyond administration,



AI also plays a crucial role in enhanced quality assurance, improving post-operative services through automated follow-up tools and insightful sentiment analysis of patient reviews. Moreover, AI automates chart audits to ensure regulatory compliance and streamlines clinical credentialing processes, contributing to a consistently high standard of care delivery.



2.0 Challenges of AI in Implant Dentistry

While artificial intelligence offers transformative potential for implantology, its successful integration hinges on addressing several significant challenges and limitations. These can be broadly categorized into issues related to data, implementation and ethical/professional considerations.

2.1 Data-Related Challenges

A primary concern is the need for large and high-quality datasets. AI systems, particularly deep learning models, demand extensive, high-quality and representative data for effective training. Acquiring such datasets in dentistry is challenging due to strict privacy regulations (e.g., HIPAA, GDPR) and the limited availability of large-scale, meticulously annotated data. The exclusion of low-quality images or a lack of diverse datasets can compromise the reliability and real-world applicability of AI models, leading to variations in accuracy and potential overfitting. This can hinder the reliability of diagnoses and predictions across diverse patient populations. This also contributes to the potential for bias in algorithms; if AI systems are trained on non-representative or skewed datasets, they may perpetuate existing biases, leading to flawed analyses, misdiagnoses or inappropriate treatment plans, potentially creating disparities in care for certain patient demographics.

2.2 Implementation Challenges

The high implementation costs associated with integrating AI into dental practices are a significant barrier. This includes substantial investments in advanced technology, robust IT infrastructure and comprehensive training for both staff and educators. These costs can be prohibitive for smaller practices, potentially leading to unequal access to advanced AI tools and widening the digital divide. Furthermore, variability in accuracy remains a concern; while AI boasts high accuracy in many areas, its performance can vary, depending heavily on the algorithms and data used for training. More rigorous clinical studies are needed to validate real-world

effectiveness and long-term clinical performance across diverse clinical contexts.

2.3 Ethical and Professional Challenges

Perhaps the most complex challenges revolve around ethical and professional considerations. Data privacy and security concerns are paramount, as AI systems handle vast amounts of sensitive patient information. This raises critical questions about data protection, the potential for unauthorized access or breaches, and the necessity of robust data security protocols, anonymization and encryption, along with clear regulatory frameworks. There is also a significant potential for over-reliance and devaluation of human judgment. Dentists might become overly dependent on AI tools, potentially leading to a less personalized patient experience and an erosion of critical diagnostic skills and nuanced clinical considerations. AI should serve as a supportive tool to augment human capabilities, not replace the essential human element of empathy and individualized care. This leads directly to complex questions of ethical and legal accountability. Determining liability for errors or adverse outcomes caused by AI systems is complex, requiring clear legal frameworks to ascertain responsibility among the dentist, AI developer or health care institution. Transparency in AI's role is also crucial for informed patient consent. Ultimately, the need for human oversight remains critical; despite AI's capabilities, it cannot fully replace the expertise, judgment and ethical decision-making of a human dentist. Critical decisions still require human oversight, as AI recommendations should be considered just one input in the comprehensive decision-making process.

Conclusion

Overall, AI offers transformative potential for implantology. Its successful integration, however, hinges on proactively addressing limitations related to data quality, implementation barriers and, crucially, the continuous emphasis on human expertise, ethical considerations and professional judgment. As AI continues to evolve, fostering a balanced approach that leverages its strengths while mitigating its weaknesses will be key to unlocking its full promise in advancing dental care.

The eposteal implant: A new solution for the extremely resorbed ridge

By: AO Fellow and Diplomate Robert J. Miller, DDS

The endosseous root form implant represents a favorable option for tooth replacement in most cases of edentulism with very high success rates and predictable outcomes. However, endosseous implants require sufficient bone volume and quality to succeed, and these ideal parameters are not always available. In complex situations involving resorbed or compromised alveolar bone, the use of endosseous implants can be challenging or even impossible.

For almost a century, dental surgeons have attempted to devise strategies to stabilize dentures or other types of tooth replacements. Denture fabrication became an art form, with each iteration addressing a previous shortcoming in stability and comfort. Even with exquisite denture fabrication, further loss of the alveolus was unavoidable, and patients suffered the consequences of extreme alveolar bone loss (Figure 1).

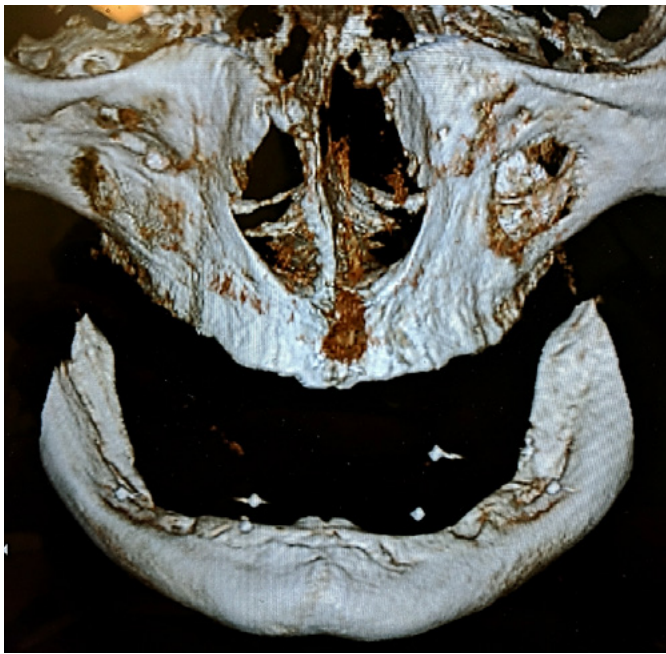


Figure 1. 3D modeling of a severely resorbed patient presenting for implant evaluation

The first attempt at fixation in the extremely resorbed ridge was the subperiosteal implant, designed to be placed over the existing bone volume with attachment points for a prosthesis. This implant was first introduced in Sweden by Gustav Dahl in the 1930s and then brought to the U.S. a decade later by Gershkoff and Goldman. It enjoyed a renaissance for another two decades as the preferred implant for the severely resorbed ridge. However, the absence of true hard tissue integration and a concomitant

high failure rate resulted in this modality falling out of favor. At the same time, the first endosteal (endosseous) implants fabricated in titanium drove the implant marketplace as a consequence of the concept of osseointegration. This type of implant remains the predominant class of implantable devices to date. While implant surgeons have become very adept at placing endosseous implants in a wide variety of cases, the extremely atrophic ridge remains problematic. Critical neurovascular structures, pneumatized sinuses, knife-edge ridges, and poor quality of bone remain limiting factors for these types of implants (Figure 2). Further, major bone grafting to create sufficient ridge volume is a time-consuming process with considerable complexity, long healing periods, increased risk of infections, and limitations on vertical regeneration. Consequently, surgeons developed additional implant modalities utilizing tilted, zygomatic, pterygoid, and nasalis implants to avoid grafting procedures and significantly reduce treatment time. However, these implants require a high level of training and carry much higher risks for potential bleeding episodes, neurosensory deficits, orbital perforation or infection.

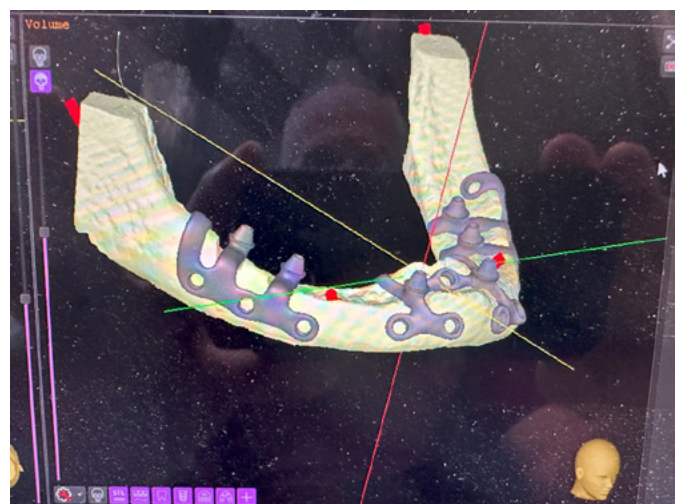


Figure 2. Panorex view for pre-treatment planning of eposteal implants

Approximately 10 years ago, clinicians in Europe started to revisit the concept of placing patient-specific implants over the existing bone complex to avoid bone grafting and potential injury to critical structures. In reviewing the literature, it was clear that the first problem they had to overcome was the lack of osseointegration as the result of using chrome cobalt materials. The choice was then made to use Titanium grade 5 alloy to ensure biocompatibility and even integration. With the proliferation of computer-based modeling, they no longer needed to take direct bone impressions in a first surgery and then deliver the implants at a subsequent appointment. The use of CBCT imaging with intraoral fiducial markers allows the surgeon to evaluate the planned prosthesis and then merge this plan with the current bone volume. The implants can then be virtually designed and printed with a choice of prosthetic attachments (Figure 3).



Figure 3. Virtual implant planning for a segmented eposteal implant

While all subperiosteal implants are eposteal, not all eposteal implants are subperiosteal as we may choose to graft over the implant. As a consequence, these implants may no longer be placed under the periosteum and therefore should not be classified as subperiosteal. We prefer to use the term eposteal implant as the major classification for any implant designed to be placed over the bone complex. It reflects our new concept of true integration of this type of implant modality.

Advantages of the eposteal implant include:

- I. Minimally invasive surgery that reduces risk to critical anatomy
- II. Fabricated in Sintered Laser Melted printed Grade V titanium alloy for strength and biocompatibility
- III. Available in standard connections which include cementable, Morse taper, or multi-unit abutments
- IV. Prosthetic connections that are placed in more ideal positions for ease of access to screw channels and stronger prosthesis
- V. Ideal force distribution as there are no cantilevered occlusal segments
- VI. One-stage surgeries with immediate load options

- VII. Biologic design for true integration to bone and preservation of soft tissue
- VIII. Osseous graft options for covering the implant to enhance stability of the case long term

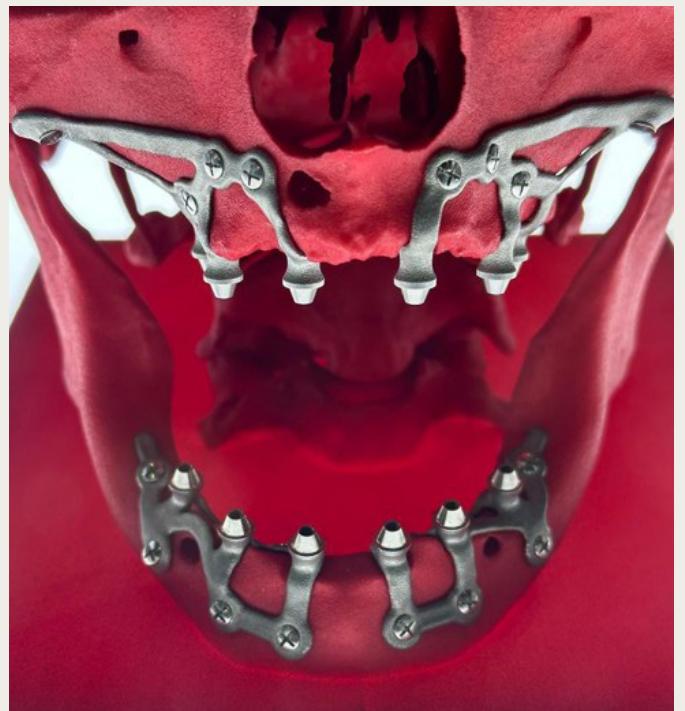


Figure 4. Example of full mouth eposteal implants for immediate load

Over the past decade, eposteal implants have been used successfully to treat compromised patients with success rates rivaling that of endosseous implants. For the older patient who may be limited financially or have medical conditions that limit the extent of more complex surgical procedures that may be employed, the eposteal implant represents a realistic and literature-based alternative for the utilization of a stable and fixed implant-borne restoration.

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Shifting trends in dental implant continuing education: Remote participation, industry influence, and the role of private institutes

By Homa Zadeh, DDS, PhD

In the past, the education received during dental school was sufficient to prepare graduates for clinical practice. However, the rapid pace of advancements in dental materials, implantology and digital technologies – including artificial intelligence – has made it impossible to incorporate all of these innovations into an already packed curriculum. As a result, many graduates find themselves needing to pursue continuing education to bridge these gaps. Traditionally, universities were the primary providers of continuing education, but with diminishing resources, many have scaled back their programs, creating an opportunity for alternative providers to step in.

Industry-Supported Education: Recognizing Biases

One of the most significant shortcomings of traditional dental education is its limited coverage of implant dentistry. As a result, many dental graduates actively seek supplementary training in this area. Historically, the dental implant industry has filled this educational gap, offering a wide range of learning opportunities. While industry-sponsored programs have undoubtedly advanced implant

education and accessibility, they often come with inherent biases. Manufacturers naturally have a vested interest in promoting their own systems and techniques, which can lead to an emphasis on the advantages of their products while minimizing potential drawbacks or overlooking alternative approaches.

This industry influence can lead to a skewed representation of the latest innovations, potentially affecting purchasing decisions and clinical choices. Additionally, industry-led courses often focus more on product training rather than broad clinical knowledge or evidence-based best practices. While product-specific training is valuable, it is crucial for dental professionals to seek education that encompasses a comprehensive understanding of implantology beyond any single brand.

The Role of Private Institutes:

Private institutes have emerged as vital alternatives to university- and industry-based models in advancing dental implant education. They offer specialized, hands-on training that bridges the gap between academic research, clinical practice and commercially driven

methodologies. Unlike traditional universities, private institutes are not restricted by academic bureaucracy or limited funding, enabling them to respond swiftly to emerging technologies, evolving clinical techniques and the changing needs of dental professionals.

One such institution is the VISTA Institute for Therapeutic Innovations, which has pioneered a hybrid blended educational pedagogy to provide flexibility to participants. This approach allows for both in-person and remote participation, ensuring accessibility to learners from diverse geographic regions. Recognizing the increasing demand for convenience and global accessibility, asynchronous learning options are also provided. This is particularly beneficial for participants in different time zones, enabling them to engage with course content at their own pace without missing out on valuable insights.

Another area where the VISTA Institute has leveraged technology is through the integration of artificial intelligence. AI-powered tools now allow for simultaneous translation into multiple languages, eliminating traditional language barriers and making high-quality dental implant education more inclusive than ever. By incorporating these innovations, private institutes like VISTA are setting a new standard for flexible, comprehensive and unbiased continuing education.

The Rise of Remote Participation

One of the most prominent trends in dental implant continuing education is the growing preference for remote learning. Thanks to advancements in digital technology, dental professionals can now engage in online courses, webinars and virtual conferences from anywhere, providing an unprecedented level of flexibility. This mode of learning is particularly beneficial for busy professionals and those in remote or underserved areas where attending in-person courses may not be feasible.

The surge in online learning demand reflects the need for continuing education that fits seamlessly into daily practice. Virtual learning platforms offer high-quality content at a fraction of the cost of traditional in-person courses by eliminating travel, lodging and time away from work. While hands-on training remains essential for skill development, hybrid learning models, such as those offered by the VISTA Institute, provide a balanced approach by combining virtual education with in-person clinical experiences.

The Role of Social Media in Continuing Education

An emerging and concerning trend in dental education is the growing reliance on social media for clinical knowledge. Many professionals turn to platforms such as Instagram, YouTube and TikTok for quick clinical tips and case studies. However, much of the content shared on these platforms lacks peer review and is often highly biased, aimed at promoting the individuals posting the content rather than providing evidence-based

knowledge. Too often, cases are shown without any follow-up, glorifying techniques that may not have long-term predictability.

This trend has contributed to a decline in participation in traditional continuing education programs, particularly among younger clinicians who rely heavily on social media for professional development. While social media can serve as a supplemental resource, it should not replace structured, evidence-based educational programs that ensure comprehensive and unbiased learning.

A Balanced Approach to Education

The future of dental implant continuing education will likely involve a combination of remote participation, private institute-led programs and industry involvement. While online learning offers flexibility and accessibility, and industry-backed courses provide exposure to cutting-edge products, private institutes play an essential role in balancing these influences. By focusing on independent, evidence-based education, they ensure that dental professionals receive a well-rounded, unbiased perspective on implantology.

Institutes like VISTA are leading this shift by offering structured, evidence-based programs that emphasize clinical expertise over commercial interests. By integrating AI-driven language translation, hybrid participation models and cutting-edge educational methodologies, these institutions are expanding access to high-quality continuing education while maintaining the integrity and objectivity necessary for sound clinical decision-making.

In conclusion, dental implant continuing education is evolving rapidly, presenting both opportunities and challenges. As remote learning continues to grow and industry influence remains a concern, private institutes stand as a vital force in maintaining the highest educational standards. By embracing innovation while prioritizing evidence-based education, they help ensure that dental professionals receive the knowledge and skills necessary to provide the best possible care for their patients.



Dr. Homa Zadeh

Multi-generational practice success:

Andrew Brodsky, DMD, MSD & Paul Fugazzotto, DDS

Dr. Andrew Brodsky:

My career as a (relatively) new graduate has been enriched because I practice in a private group setting. It was my goal to join this type of practice because of the camaraderie between doctors and team members, doctors and referrals, and especially between doctors and patients. The opportunity to develop long-term relationships, as well as the autonomy to create my own patient-centered practice philosophy, is not readily available in the DSO model, and seems challenging to develop as an itinerant surgeon. Some practitioners may see other benefits to these models, but I find it hard to believe they feel as fulfilled as I do one decade into their careers.

Does this story sound familiar? A new grad, fresh out of school, lands their first job at a busy practice. The practice owner is slammed, the phones are ringing – but there's no one in the new grad's chair.

You may be thinking: it's time to grow externally. The new grad needs to get out in the community and build their own referral base to grow the practice. That is critical. But if the new grad's patients come exclusively from these new referring partners, it will be months or years until they make meaningful contributions to the business. Those years could be especially tough on the new grad. They may develop doubts about their future at the practice or consider finding a new job – all while feeling the pressure that mounts as student loan payments come due.

Instead of this model, consider an alternative approach impressed upon me as a new associate: no patients belong to any one of us. They are all patients of the practice. Put another way, you, the experienced practice owner, create an environment where a new hire can succeed and can immediately start seeing patients. Any patient.

Not just hygiene checks, and not just the patient who wants their slowly deteriorating condition be "monitored" and continues to decline recommended care. You encourage your associate to see emergency patients. Patients who come in asking for the first available appointment. Those with specific scheduling requests. These are the first ones to see the new grad.

This is when a patient's trust and confidence in the practice matters more than ever. Patients value your



recommendation because they trust you, and so will your referring doctors. By opening the door for your associate to see any patient in need, you position the practice as truly patient-first, strengthening your relationship with your existing referral sources and earning the trust and appreciation of your new employee.

But how do you ensure the quality of the new grad's clinical acumen, technical abilities and patient management? As an experienced practitioner, your advice, insights and knowledge sharing are invaluable, from treatment planning to discussing growth opportunities. You share specific insights when questions arise. While this process does not have to be formal or particularly time intensive, it begins to develop a mutually beneficial mentor-mentee relationship. The new grad benefits from your knowledge and experience, resulting in growth and expansion of your practice.

Then comes the next phase of growth for the grad: targeting the relationships the practice owner has already established but not maximized, which can be further explored. Reaching out to the office that used to refer but seems not to have sent patients for a while, and perhaps expanding the scope of services provided in the practice.

This is where I am now. In a busy periodontal office, growing with new referrals, strengthening our existing relationships and being open to new avenues for growth and development. I've been fortunate to have a mentor who is open-minded, supportive and not afraid of change, and who understands the value-add of a new dentist with a contemporary dental education.

The final years of a dentist's career are not usually thought of as a time for evolution and growth, but that doesn't have to be true. Bringing on a new associate is an incredible opportunity for an experienced clinician to share their knowledge, expand their business and develop a meaningful relationship with a young clinician who can carry on the legacy of you and your practice.

Dr. Paul Fugazzotto

The Challenge: The volume of patients sent to us by our referring partners to seek resolution of their oral health concerns and maximization of their quality of life had become tsunami-like. Dr. Anya Rost and I had essentially foregone lunch, and our stated office hours had become nothing more than a



suggestion as we strove to consult with the vast number of new patients while still providing the desired level of care for our existing patients. We shared the belief that being “booked out months in advance” was a recipe for ultimate failure. Failure from the point of view of the patient who cannot receive timely care. Failure from a “business point of view,” as referring doctors would have no choice but to seek care elsewhere for many of their patients, who either presented with emergency situations or simply did not want to wait long periods of time to see us.

“I spent the first 10 years of my practice getting busy, and the last 40 years trying to slow down.

– Dr. Frank Celenza Sr.

The Need for Introspection and Self-Assessment:

Dr. Rost had joined the practice years earlier. Our integration was immediate and essentially seamless, with regard to modalities of periodontal surgical therapies, having both been trained in pocket elimination periodontal therapy; but more importantly in our shared belief that all patients are individual human beings requiring respect and individualized care. Busyness, fatigue or planned vacations could never be an excuse for performing therapies at less than optimal levels. Could we find another such person? In order to do so, it was important for us both to realize that a new periodontist joining the practice had to be treated as an equal with regard to distribution of new patients, sharing of opinions and concerns, and overall respect within the hierarchy of the office. It was also important to realize that no periodontist with the necessary talent and patient outlook would remain with us even if they accepted a position, if they were treated as a “second class citizen,” performing hygiene and seeing only problem patients “until they got busy.”

The Cautions: The interviewing process of course begins with vetting of applications, and is often discouraging. Fortunately, I’ve been through this process before and knew what to expect: the “clinician” who has not had the type of training we believe is necessary to definitively treat periodontal concerns in combination with appropriate regenerative and implant therapies; the “know-it-all” implantologist who has an answer for every suggestion you make regarding the cases they show you; the “business person” who immediately wants to talk about how busy the practice is and what the starting salary would be, without bothering to show you clinical cases; the “quality of life” doctor, who wants to make it clear from the beginning that he/she will not spend time in evening meetings with doctors and wants to work 9 to 5; the “digitalist” who explains to you that meeting doctors is a waste of time as everything is done now through texts and

digital platforms; these were all to be expected and were certainly encountered.

Then there are the “proclaimer” who is too busy telling you about themselves to engage in any type of interactive conversation; the “somnambulist” who seems to be getting through the daytime hours while still unconscious; and the “overcooked pasta” doctor who is devoid of personality and whose speaking and singing range consists of one note.

The Outcome: Despite the above concerns, there was a positive outcome: Dr. Andrew Brodsky joining our practice. Dr. Brodsky had been trained in resective periodontal therapies, understood the integration of implant therapies into overall care as we are periodontists, not metallurgists, and recognized the need for repeated in-person meetings and events with referring doctors and potential referring doctors. Andrew also understands the value of mentorship, entering such discussions ego-free and with a desire to evolve. In addition, Dr. Brodsky has brought a number of innovative ideas to the practice regarding appropriate utilization of digital platforms, digital communications, etc.

The Lesson: If you are willing to truly accept an associate dentist into your practice as an equal, albeit with less experience, as someone who doesn’t just “see the leftovers,” and is someone you engage in your discussions regarding practice strategies and practice future, you will find the appropriate associate, and hopefully eventual partner. You must be committed to mentoring, not “immediate production”; to education and personal growth. If, however, you believe that all of the referring doctors are “your doctors,” and that you should “triage the cases so that you treat the big ones,” you will be hard-pressed to retain such an individual, even if you are lucky enough to have them initially join your practice.

“Those holding torches will pass them to one another.

– Plato

It is not just a matter of “having another body to treat the patients.” Having the appropriate people join your practice will prove advantageous and profitable in both your professional and personal lives.

Dr. Andrew Brodsky is a board-certified periodontist, practicing in Milton and Norwell, Massachusetts.



A D V E R B S

By: AO Fellow and Diplomate, Ed Sevetz, DMD



Dr. Ed Sevetz

What is an adverb? An adverb is a part of speech that modifies or enhances a verb. "OK, but what does that have to do with osseointegration?" Glad you asked. Please allow me to explain and give the reason for using this part of speech for this article in the AO Newsletter.

Occasionally. Rarely. Uncommonly. Those are all perfectly good, descriptive adverbs that mean something doesn't happen very often. You might be thinking, "Yeah, so what?" It's not a "what." It's a "who." No, not the kind of "who" imagined into existence by the late, beloved Dr. Seuss, although this "who" is also a doctor. A different kind of doctor. One who has imagined into existence something we can all use to quantitatively make a noteworthy, beneficial enhancement in the dental health of our patients.

Allow me to introduce the "who": Dr. **Cherilynn Sheets**. Those adverbs above are perfectly suited to her. At first glance, one might think, just another member of the Academy of Osseointegration. So? There are thousands of them worldwide. Why did her "footsteps" cross the path of AO so infrequently?



Let's take a step back for a moment and look at what makes this rarity "tick." Dr. Sheets' family tree seems to have its "roots" formed more from enamel and dentin than tree "bark." She has so many dentists in her family tree that one could argue that the "D" in her DNA stands for dentist. By the latest "census," her dad, an uncle, an uncle-in-law and two cousins all became dentists. Her mom and two aunts were dental assistants. One wonders, if under her early Christmas tree, did she find such gifts as a "mirror and explorer?" But there was little wonder why, by sixth grade, she decided she would also become a dentist when she grew up, despite the fact that dentists, back in the "olden" days, were predominantly male.

Let's now transition from the "who" to the "what" and the "why" to explain the paradigm-shifting claim that ended the second paragraph above.

Being a bright, hardworking student, Cherilynn was admitted to dental school early to pursue the precision profession of dentistry. Along the way, her pursuit of that precision was her compass by which she navigated her pathway. To her, it was less than satisfying when at times she realized that some data about

progress or a diagnosis were subjective and not quantitatively measured. It bothered her that one dentist's diagnosis might not be the same standard as others. Couldn't there be some measure that would be a standard by which an outcome, or diagnosis, would be uniformly agreed upon?

She pursued her career for precision in prosthetics and peri-prosthetic problems and solutions. More than 30 years ago, this led her to consult with the dean and a professor at the University of California at Irvine College of Engineering. Together they collaborated to achieve both hardware and software that would precisely and objectively quantify data needed to take the care of dental restorative work to a level only imagined before, despite being deemed clinically unreachable.

So now, thanks to this relentless pursuit of precision, a new technology has been gifted to the dental profession through Cherilynn's persistence for perfection for patients. A diagnostic, handheld instrument, similar in dimensions and shape to the ubiquitous operator handpiece, can touch an implant and objectively give data as to how sturdy it is in bone, even after restoration, without having to disassemble it to touch the implant or abutment. It can even tell when it would be ready to restore, after allowing for osseointegration to take place. Don't take my word for it – the FDA has given its approval for this. What does that mean for dentistry? No more having to guess when an implant is ready to restore, and it alerts if a problem is asymptotically developing. The dentist would know. The hygienist would know. Their studies have progressed beyond working with implants. Wouldn't it be helpful to know if a natural tooth is cracked, even though clinical observation and radiographs couldn't reveal it yet? One could also track and trend tooth mobility over time. This is accomplished by simply touching this proven technology to an implant (single or multiple restorations, without disassembly) or to natural teeth. This, and more, has been studied for more than 10 years now, thanks to Cherilynn's pursuit of precision for our patients' enhanced oral health.

Lest you think Cherilynn is some kind of hardware "geek" with a computer for a heart, check this out – she has a

Continues on page 17

Beyond the screw: Reconsidering abutment selection in implant prosthodontics

By Dr. Mohamed Rahhal, associate professor, prosthodontics specialty care unit director, interprofessional education director, MOSDOH-ATSU

As prosthodontists and implant clinicians, we often focus heavily on surgical precision and osseointegration. Yet the success of implant therapy is increasingly defined by prosthetic planning, particularly the abutment, which serves as both a mechanical connector and a biological influencer.

Abutment selection goes beyond the basic choice of titanium versus zirconia, or stock versus custom. It is a strategic, case-specific decision that must consider the patient's anatomy, soft tissue behavior, aesthetic expectations and long-term maintenance needs. In anterior restorations, I often prefer custom zirconia abutments for their excellent tissue response and lifelike translucency. However, when strength is a priority – especially in posterior, load-bearing areas – stock titanium abutments remain a dependable choice.

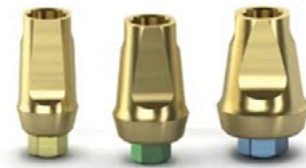
In cases that demand both strength and superior aesthetics, hybrid abutments have become a valuable option. These combine a titanium base for optimal implant connection and durability with a ceramic or zirconia outer structure to mask the metal and enhance aesthetic integration. This dual-layered design makes hybrid abutments a privileged solution when clinical and cosmetic demands intersect.



Recent focus on critical and subcritical contours has reshaped how we approach prosthetic emergence. The critical contour – within 1 millimeter of the gingival margin – significantly influences the final position of the soft tissue. A convex profile here may lead to apical displacement of the gingiva. Below it, the subcritical contour, when designed concavely, promotes soft tissue volume and stability, creating not only a seal but a scaffold for long-term aesthetic success.

The material surface and finish of abutments further impact tissue health. While zirconia leads in

biocompatibility, polished titanium and lithium disilicate offer durable, tissue-friendly alternatives. However, material choice must align with patient sensitivities, location and aesthetic expectations.



In posterior regions, the restorative platform diameter becomes a critical biomechanical factor. Narrow platforms may restrict ideal emergence profiles and lead to over-contoured restorations, while wider platforms enable more favorable soft tissue shaping and load distribution.

As digital workflows become standard, CAD/CAM abutments offer unmatched customization – but they demand precision in scan body use, lab communication and milling protocols. This transition underscores the need for continuous collaboration between clinicians and technicians.

In my teaching, I stress to students that abutment choice is not isolated – it reflects the entire diagnostic and restorative vision for the case. It's where the art of aesthetics meets the science of function, guided by evidence and shaped by experience.

The future of implant dentistry lies not just in placing implants but in mastering the prosthetic interfaces that define long-term success. Abutment selection, once seen as a routine mechanical task, must now be viewed as a central component of biologically driven, patient-centered care.



Dr. Mohamed Rahhal



Operating microscope to improve predictability of periodontal and peri-implant therapy outcomes

By Albert Chan, DDS, MS

Technical advantages of the operating microscope (OM), including unparalleled magnification (up to 25x), coaxial illumination, and facilitation of the use of microinstruments as well as microsutures (6-0 and finer sutures), have been demonstrated in medicine and part of dentistry – for example, endodontics. The use of the OM is on the rise in the periodontal field. Taking Ohio State University (OSU), Ohio, as an example, our periodontal program is equipped with the OM for the residents to perform high-quality nonsurgical as well as surgical periodontal procedures. Lectures as well as hands-on workshops pertinent to microsurgery are given on a regular basis to prepare our residents for having a minimally invasive mindset and precise periodontal care. Ultimately, the educational goal is to train our residents to become competent periodontal microsurgeons. As for the scientific rationale of applying the OM, accumulating evidence has shown its benefits at the tissue level and to some extent at the clinical level. The acronym “TEAM” approach (Table 1) could further explain how the technical advantages can translate to clinical benefits with the use of the OM (DOI: 10.11607/prd.2024.6.c). Successful implementation of the TEAM

approach can ultimately contribute to improved clinical/ patient-reported outcomes and operator well-being.

The explanation of the “TEAM” approach. The operating microscope allows for higher performance in these four key aspects.



Related to delicate **Tissue** handling, managing fine periodontal as well as peri-implant tissues is tactilely sensitive. The common goal is to exert as little trauma as possible while preserving tissue integrity, volume, and microvasculature (DOI: 10.1002/cap.10265; DOI: 10.11607/

prd.6213). This is especially true for tissue regenerative/reconstructive attempts. It is also challenging to practice on thin phenotype, commonly characterized by narrow (less than 2 mm) keratinized mucosa, soft tissue of thickness less than 1 mm, and narrow interdental papillae (2-3 mm wide). High magnification provided by the OM facilitates seamless visual-tactile coordination. For example, during flap elevation, signs of incipient tissue tear under the OM can be captured, and the magnitude and direction of the force translated from the surgical elevator to the tissue then can be modified. This precise tissue handling practiced and monitored under the OM is a critical gateway to achieve predictable regenerative outcomes.

The use of OM makes it a breeze to identify and control/eliminate the **Etiology**. A fundamental requirement to predictably treat implant-related conditions is to recognize and control or eliminate any etiological factors, such as microbial biofilm, calcified deposits, residual cements, and defective restorations. The current threat to implant dentistry is peri-implantitis, which compromises function and esthetics of a significant portion of the population with dental implants. Additionally, attempting reconstructive strategies to rescue implants is currently not predictable. The four interrelated negative conditions hampering effective tissue reconstruction are: inferior tissue perfusion, unfavorable bone topography, ineffective surface treatment, and unstable wound (DOI: 10.1002/cre2.788). As the primary etiology is dysbiosis, implant surface decontamination is key to creating a biocompatible environment for tissue reconstruction. While biofilms might be relatively easy to remove, calcified deposits (necrotic bone or dental calculus) between the implant threads can be difficult. Under high magnification (~25x), surface decontamination can become more efficient, potentially resulting in improved outcomes.

The OM can magnify **Anatomical** structures – for example, mental nerve and the Schneiderian membrane – which are commonly encountered during implant-related surgeries. Surgical safety by avoiding damage to these sensitive structures is the priority. When releasing facial flap for hard/soft tissue regeneration in the mandibular

premolar-first molar region, the mental nerve should be protected. On the other hand, being overly cautious could also result in inadequate flap releasing, negatively affecting the clinical outcome. Therefore, being able to visualize and navigate around mental foramen without damaging it could be achieved under the OM. In the same way, the integrity of the Schneiderian membrane should not be compromised in maxillary sinus augmentation (DOI: 10.11607/prd.5407). The OM is especially useful for investigating membrane integrity during vertical/internal sinus augmentation (DOI: 10.1111/cid.13403). Early detection of membrane perforation can lead to proper damage-control strategies by, for example, containing the perforation size, not placing bone particulates, choosing a shorter implant, or aborting the surgery in extreme cases. Currently there is no adequate method to evaluate membrane perforation; therefore, the OM presents itself as an opportunity for this purpose.

The last word “M” relates to **Minimally** invasive approach. One of the main indications for surgery is to gain access. The traditional “one-size-fits-all” thinking for flap design and management may not be applicable anymore. Instead, a customized approach based on the surgical needs and bearing a concept of “start as small as possible, extend as large as necessary” in flap design should be implemented. After all, any types of incision and flap reflection can cause disruption of tissue integrity, undesirable tissue trauma, compromise of microvasculature, and wound instability, which may result in the occurrence of mucosal recession, scar tissue formation, increased surgical time, and concomitant patient morbidity, among other possible adverse events. The advantage of the OM in this aspect is to allow for smaller access and at the same time achieve the same goal, compared with the traditional approach.

To summarize, the use of OM to improve surgical predictability is promising through the **“TEAM”** approach. In addition to the technology itself, deliberate practice and cognitive coordination between visual cues and tactile sensations are equally important. These technical along with nontechnical skills will eventually contribute to higher odds of surgical success that we are all longing for.

Adverbs... (continued from page 14)

deeply compassionate heart for those with dental needs. She is the founding president of the National Children's Oral Health Foundation, which helps nonprofits around the country that provide oral health services and education to children by providing grants and other assistance. This philanthropic organization has been called “America's Tooth Fairy.”

If you want to learn more about how this FDA-approved technology can benefit your patients, whether your office is family practice or a specialty, attend the AO's next annual meeting in Washington, D.C., where Dr. Cherilynn Sheets will be present on the podium. In the meantime, it is hoped you now have a greater appreciation for “lowly” adverbs. Seriously?

Letter to the AO members from the officers of the ADEA Implant Dentistry Section

By Rafael Delgado Ruiz, DDS

Dear AO members,

The officers of the ADEA Implant Dentistry Section would like to share a brief overview of our section, highlight some of the exciting initiatives planned for the year, and warmly invite you to join our community of colleagues dedicated to advancing implant education.

What is an ADEA section:

A Section is a group of ADEA members who share similar professional interests and come together to exchange ideas and stay informed about developments in specific areas of dental education. The Implant Dentistry Section includes members from various specialties, including periodontics, prosthodontics, oral surgery and general dentistry. Our members also represent a wide range of academic roles (program directors, department chairs, faculty, residents and dental students) as well as corporate partners with an interest in implant education.

Activities of the Implant Dentistry Section Planned for the Year:

The activities of the Section are planned by its officers in coordination with members and provide an indication of their diverse interests and needs. For this year our section launched the first issue of the newsletter "Engage," a communication channel where the members can participate and contribute with opinion articles, discussions, short articles on Implant Dentistry topics and new technological advancements. Also, we provide recommendations of new and relevant implant literature, educational opportunities and techniques offered to our dental students, and announcements of implant education related events. We also installed a bimonthly event called "Journal Club" where we discuss case scenarios related to teaching implant dentistry and evidence-based implant dentistry education. Within our goals for this year, we are building a resource sharing platform oriented to these members with didactic and clinical teaching of Implant Dentistry to promote the advance of educational initiatives. One important goal for this and upcoming years is to strengthen our relations and collaboration with academic and professional organizations like the Academy of Osseointegration, American Academy of Periodontology and the American College of Prosthodontics. We believe that these connections are essential to move united and grow stronger.

Benefits of joining the ADEA Implant Dentistry section:

By participating in the ADEA Implant Dentistry Section, you'll enhance your academic and professional development through active involvement with a community of dental educators, program directors, researchers and clinicians focused on implant dentistry. Membership offers

an excellent opportunity to stay informed about the latest teaching methods, curriculum innovations and evolving standards in implant education. Professional networking is one of the most valuable benefits. Through section activities, you can connect with colleagues nationwide. These connections often lead to collaborative research, educational projects, speaking invitations, publications and academic opportunities. Whether you're early in your career or a senior faculty member, these relationships provide lasting professional benefits.

The section also supports curriculum development and innovation. Members can contribute to discussions and working groups focused on advancing implant education at both predoctoral and postgraduate levels. The section helps members stay informed about educational trends, including simulation technologies and digital workflows. Our member community stays connected through ADEA Connect, where both group and individual messaging support customized communication and collaboration. To support continued learning and professional growth, members benefit from implant-focused programming at the ADEA Annual Session. This also includes collaborations with other ADEA sections and special interest groups and participation in poster presentations covering current clinical practices and educational strategies.

The section also provides opportunities for leadership and recognition. Members can serve in roles such as Secretary, Chair-Elect or Councilor. We actively promote collaboration with other professional organizations (such as the Academy of Osseointegration) as well as with corporate partners. Members are also encouraged to contribute to the Journal of Dental Education, section newsletters, journal clubs and topical discussion groups, further enhancing their academic visibility and impact.

Mentorship and faculty development are essential aspects of the section's mission. Members receive support from experienced educators and are encouraged to mentor junior faculty, residents and students. The section fosters faculty calibration and collaboration across institutions to enhance the quality and consistency of implant education.

What can I do to participate in the Implant Dentistry section?

Become ADEA member <https://www.adea.org/for-members/join-renew> and register in the Implant Dentistry section <https://www.adea.org/for-members/member-communities/ADEA-Council-of-Sections/adea-sections>

If you have any questions, please feel free to contact Rafael Delgado Ruiz Secretary of ADEA Implant Dentistry section at rafael.delgado-ruiz@stonybrookmedicine.edu.

Lifelong learning and research for all

By Julie Mitchell, DMD, MS

How many of us read the *IJOMI* and *IJPRD* cover-to-cover when it arrives in the mail? If you have a nose for new research – or if you have found your interest waning in recent years – read on!

As a full-time private practitioner, I think back so fondly on my residency years and the engagement in inquisitive discussion within and between the departments of the dental school. We would debate healing, materials, clinical outcomes and the relevance of various publications on a daily basis. Now, my colleagues and I often spend time discussing outcomes and clinical decisions in our own practice and interesting things we find in the recent literature.

In 2023, I began my work as a member of the Academy's Research Submissions Committee and have made some fantastic new professional connections. There is remarkable diversity on the committee in terms of training, background, current research and clinical work. Dozens of articles are submitted each summer for evaluation by the 16 members of the committee; we grade each abstract on originality, significance, relevance and quality. To qualify as a clinical study, at least 20 human subjects must be enrolled.

This past year, the Oral Scientific and Oral Clinical research presentations brought us a variety of topics: clinical presentations ranged from longitudinal peri-implant bone assessment to peri-implantitis to soft tissue esthetics. The Oral Scientific presentations brought even more variety: biodegradable and printed scaffolds, magnesium implants, and artificial intelligence applications in surgical planning. My colleagues on the committee and I had some challenging decisions to make.

The presenters are always well-prepared and eager to answer questions. Personally, I love being able to take the opportunity to ask genuine, spontaneous questions of the presenters. Knowing what it takes to conduct a scientific or clinical research study and the nuances and details that each researcher brings to the podium, to have this opportunity to engage is a true privilege.

The 2025 Oral Scientific presentation winner, Dr. **Heitham Ben Amara**, DMD, MSc, Ph.D., presented remarkable research on Ti and Mg implants in rat tibiae. By assessing bone-implant contact and deploying qPCR and immunohistochemistry, we were treated to a new perspective on implant composition and immunomodulation.

The 2025 Oral Clinical presentation winner, Dr. **Jacob Zimmer**, DMD, presented a cross-sectional study of 405 implants in 202 patients with five to 10 years of loading and explored risk factors for peri-implant mucositis and peri-implantitis. A remarkable effort in clinical follow-up and data collection!

We congratulate the winners and commend all presenters on their willingness and diligence, and want to welcome engagement in next year's competition on the part of both the researchers and AO Annual Meeting community.

2024 Best Presentation Awards

Best Oral Clinical Presentation

Risk Indicators for Peri-Implant Diseases and Peri-Implantitis Severity: A Cross-Sectional Study on Implants with 5 to 10 Years of Loading

Jacob Martin Zimmer

\$1000

Best Oral Scientific Presentation

Osseointegrate and Vanish: Immunomodulation by Biodegradable Magnesium Implants Shapes Their Integration into Bone

Heithem Ben Amara

\$1000

First Place ePoster Award

Butterfly Graft: Optimizing Soft Tissue Outcomes in Adjacent Maxillary Implants Using a Digital Approach

Alexander Rubinov

\$500

Second Place ePoster Award

Comparison of Ultrasonography, CBCT, Transgingival Probing, and Probe Transparency with Histological Gingival Thickness: A Diagnostic Accuracy Study Revisiting Thick Versus Thin Gingiva

Parham Hazrati

\$250

Best Case Presentation

Vertical Ridge Augmentation Using Ceramic 3D-printed Customized Bone Block-associated rhBMP-2: A Report After Four Years Implant-supported Restoration Loading

Jamil Awad Shibli, DDS, MSc, PhD

\$500

Best Clinical Innovations

Comparison of Artificial Intelligence Models for Automatic Segmentation of the Mandibular Canals and Branches

Jinlong Shao

\$1000

Best Emerging Leaders Presentation

Full Maxillary Arch Rehabilitation by Means of a Multidisciplinary Digital Workflow Using Customized Titanium Meshes and Guided Implant Surgery

Javier Calatrava, DDS, MSC, EFP

NOTE: Following is an introduction to a series of columns in which experienced experts will discuss each career path option in detail.

I've graduated, now what...

By Paul Fugazzotto, DDS

If you are newly graduated from dental school, the practice landscape most likely feels quite different from when you entered college. If you come from a "family of dentists," it may feel like you have traveled at warp speed and entered an alternate reality. Graduating dentists are given the impression that their career paths are severely limited, due to a combination of their significant financial debt and the fact that "all of the practices are being bought up."

None of this is true.

The essence of clinical dentistry remains unchanged. While it is true that a practicing dentist no longer cuts hair or performs general surgery, it is also true that all ethical clinical practices, regardless of their specific practice milieu, are characterized by caring, clinical acumen and a desire to keep learning.

Practice opportunities of varying shapes and forms are all still feasible today. However, before deciding upon a path, a graduating dentist must perform an introspective examination and answer key questions for themselves:

- Do I need/want to be "in charge"?
- Can I work well with a group of peers?
- Will I be comfortable being told how to practice?

- Am I willing to "take my work home," including evening meetings, dinners, etc., or do I desire more conventional "9 to 5" employment?

Now come the tougher questions to pose to yourself and answer honestly:

- Am I insightful enough to assess opportunities without an advisor?
- Am I able to extricate myself from a situation if I find it is not what I expected, in a timely manner?

Stories that are all too common:

- A graduate who joined a private practice with the promise of "a mutual decision one to two years out" as to

whether the graduate in question would begin the buy-in process to partnership found himself asking about the opportunity year after year for six years, until he finally realized the promised opportunity was not going to develop. While he offered numerous reasons for why he remained in this practice for six years before leaving for other opportunities, he ultimately admitted it was a combination of inertia and fear of the unknown.

- A female periodontist who joined an existing practice upon graduation found herself subjected to inappropriate comments almost immediately. After seeking advice, she left the practice and spent a few months researching and finding a better opportunity.
- An oral surgeon who sold her young practice to a DSO felt she had made the right move for two years, then the DSO was bought by a larger DSO, and “the rules changed.”
- A prosthodontist who sold his practice to a “new kind of group,” where the doctor maintained autonomy in treatment decisions, quickly found out that while he would indeed still decide how to prepare a tooth, he had no input with regard to materials used, laboratories selected or staff employed.

The above examples are only meant to serve as cautionary tales. There are many thousands of graduates who have found practice environments that suit their temperaments, match their value systems and fulfill their desires.

What are the post-graduation clinical practice options (hybrids of the options below will not be explored, as the combinations are endless)?

Opening a de novo practice: Often viewed as an impossibility due to a combination of financial commitments and high levels of corporate and private competition, this option offers the highest degree of autonomy and potentially of stress as well.

Joining an existing practice, with a desire to become a partner: Viewed as a means by which to be mentored and maintain some autonomy, eventually leading to full autonomy and responsibility, this option is situationally dependent, as seen from one of the above examples.

Joining an existing practice, with no desire to become a partner: While providing security and greater relief from financial pressures, associateship leaves you at the mercy of the owner’s clinical and business decision-making.

Working for a DSO: While all management and financial practice stresses are removed, autonomy is usually nonexistent. In addition, the potential for “inertial comfort” is significant.

Purchasing an existing practice: While financially impractical for many recent graduates, such a purchase may offer both an immediate patient base and income flow while retaining autonomy, albeit with significant business stresses.

For specialists, working in a number of private practices: Theoretically a means by which to eliminate management and marketing stresses while still being profitable, this peripatetic option may prove tiring and uniquely stressful when working in disparate practice settings.

So, which one is right for you?

As we explore each option with guest columnists with significant experience regarding each career path, it is paramount to remember the following:

You must look inside yourself first. If you do not openly and honestly face your own fears, desires and limitations, the chances of you maximizing your potential and happiness will be severely compromised.

“What we achieve inwardly will change outward reality.”
– Plutarch

Your first career choice need not be, and often won’t be, your final one. Timidity and/or ostrich impersonation is valueless at best and catastrophic at worst.

If this exploration seems daunting, you can always fall back on an old rocker who is still performing:

“Yes, I think it can be easily done...”
– Bob Dylan, Highway 61 Revisited



Dr. Paul Fugazzotto

Advancing excellence through AO authorized training centers

For members seeking to elevate their expertise in implant dentistry, the Academy of Osseointegration's authorized training centers offer an unparalleled pathway to professional advancement. These specialized programs provide more than just continuing education – they deliver targeted training specifically designed to help practitioners meet the rigorous requirements for AO Masters and Diplomate credentials while refining their clinical skills in implant dentistry.

"AO Authorized Training Centers are the ideal places to receive comprehensive and engaging implant training, providing an excellent foundation for pursuing AO Mastership or AO Diplomate status," emphasizes Dr. **Hom Lay Wang**, who has been involved with their development.

The AO currently recognizes 12 approved training centers that meet the organization's stringent academic and clinical standards. Each center provides comprehensive education and hands-on training in the science and artistry of dental implants, ensuring practitioners receive instruction that aligns with AO's exacting criteria for excellence.

All authorized training centers must meet or exceed AO's Training Provider requirements for Master/Diplomate Clinician Courses in Implant Dentistry. These qualified institutions demonstrate they possess sufficient faculty expertise, financial stability and academic infrastructure to support AO's educational standards. Additionally, each facility maintains the necessary professional, technical and clinical personnel required to deliver training that meets AO's comprehensive requirements for advanced implant education.

Visit <https://osseointegration.org/authorized-training-centers/> to see the full list of AO Authorized Training Centers locations.



AO events and CE calendar

Tuesday, September 16

Noon EDT

Laser Applications in Implant Dentistry

Mehrdad Favagehi, DDS, MS

Wednesday, October 22

Noon EDT

Crestal Sinus Lift: Complications and Their Management

Claudio Stacchi, DDS, MSc

Thursday, October 23

Noon EDT

AO Student Webinar Series

Novel Crestal Sinus Elevation: Maximize Lifting and Optimize the End Resultst

Jerry Lin, DDS, DMSc

Tuesday, November 11

Noon EST

Prosthetic-Perio Interdisciplinary Care

Alvaro Blasi, DDS, CDT and

Gonzalo Blasi-Beriain, DDS

AO/AAP consensus on prevention and management of peri-implant diseases and conditions: Summary report

By: AO Fellow and Diplomate Mehrdad Favagehi, DDS, MS; Academy News Editor



Dr. Mehrdad Favagehi

Peri-implant diseases, including peri-implant mucositis and peri-implantitis, affect a substantial number of patients with dental implants. Peri-implant mucositis is a reversible inflammatory lesion of the peri-implant mucosa, while peri-implantitis involves inflammation and the loss of supporting bone, posing a threat to implant stability and long-term success. The rising use of dental implants has increased the prevalence of these diseases, emphasizing the critical need for effective prevention and management strategies. Notably, the dental community has recognized the need for standardized treatment protocols due to the variability in treatment outcomes and the lack of consensus on management in traditional dental education.

The Academy of Osseointegration (AO) and the American Academy of Periodontology (AAP) convened a summit to review the scientific evidence on peri-implant diseases and establish a unified framework for their prevention and management. The resulting publications provide valuable insights, including:

- **Prevalence:** The prevalence of peri-implant diseases increased over time. Peri-implant mucositis prevalence ranged from 7% to 85% at the implant level. Meta analyses of the included randomized controlled trials revealed a weighted mean of 20% after a mean loading time of 1–5 years for peri-implantitis.

- **Risk Factors:** While dysbiotic plaque or biofilm is a primary etiologic factor for peri-implant diseases, there are various categories of risk factors that were reported in following 4 major groups:

- **Patient-Related:** Systemic diseases and conditions such as smoking, diabetes (uncontrolled), depression (and certain antidepressant medications) and obesity are significant risk factors.

Smoking for instance, negatively affects mucosal barriers, immune function, and the peri-implant sulcus microbiota.

- **Surgical and Implant Related Factors:** Implant malposition, implant micro- and macro-design were among surgical and implant factors that could significantly influence the pathogenesis of peri-implantitis.

- **Prosthetic Design Related Factors:** Poor prosthetic design and residual cement play a significant role in the etiology of peri-implant diseases.

- **Soft Tissue Related Factors:** Vertical and/or horizontal deficiencies in the mucogingival complex around implants with is associated with the onset and progression of peri-implant diseases.

- **Multifactorial Nature:** The etiology of peri-implantitis is multifaceted, with various factors showing different degrees of association with the condition. Odds ratios, which measure the association between an exposure and an outcome, help quantify these risks. For example, the odds ratio for developing peri-implantitis in diabetics is 2.31, for smokers is 2.27, and for patients with active periodontitis is 4.05. This suggests smokers, diabetics, and patients with active periodontitis are 2 to 4 times more likely to develop peri-implantitis.

- **Expert Consensus:** The AO/AAP summit reports explicitly differentiate between findings based solely on scientific evidence and expert opinions in areas where data is incomplete or inconclusive. For instance, there was a high level of agreement among experts (93%) that implant macro- and micro-design influenced the risk of peri-implantitis onset/progression.

- **Clinical Translation:** Recognizing the existing gaps and inconsistencies in the evidence base, the summit opted for the term “clinical translation” instead of prescribing rigid guidelines. The reports utilize tables and decision tree algorithms to guide clinicians in developing individualized treatment strategies for their patients, emphasizing evidence-based management of peri-implant diseases. Early identification of risk factors, tailored treatment protocols, and continued maintenance are highlighted as crucial for optimizing long-term implant therapy outcomes.

For more information on the AO/AAP consensus on prevention and management of peri-implant diseases and conditions please click on this QR code.





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