



Academy of
Osseointegration
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Academy NEWS

A QUARTERLY MEMBER NEWSLETTER

A United Voice for Interdisciplinary Leadership

*AO Global Community Demonstrates
Evidence-based Implant Dentistry*

VOLUME 30, NUMBER 2 • 2019

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ACADEMY NEWS

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President's Message

Advancing our brand, defining the future

By Jay P. Malmquist, DMD

We have come a very long way with both the Academy of Osseointegration and implant dentistry and promoting the best care for all in a structured and cohesive organization. However, issues striking at our fundamental scientific foundation in the field of implant dentistry have become much more important than they were just a few years ago.

Crucial to our future is the AO brand. The Academy is the only all-inclusive organization that brings together all disciplines of dentistry to give our patients the best implant therapies. AO is also different because of its heritage, as the very concept of osseointegration has been key to where we started, and where our continued dedication to the highest standards in patient care, ground breaking research and education -- with evidence-based dentistry at the center of its approach -- has remained our focus.

It is incredibly important to have a robust membership to support the Academy's strategic direction, and to "enhance oral health globally by advancing the science, practice and ethics of implant dentistry and tissue engineering," as our mission states. I feel strongly that we should be the united voice that speaks for implant care as we enter into the controversial areas of specialty recognition, certification and training for every doctor who aspires to use implant care to further patient health.

A recent article in *The Atlantic* suggested that dentistry may be much less scientific than the average patient is led to believe. It is even more important now to demonstrate how evidence-based dentistry has long been one of the Academy's deep-rooted mantras.

Over the years, the Academy has been the leading force in organizing scientific summits designed to assess many clinical and evidence-based areas of advancement in implant dentistry. Each Summit has concentrated on a main theme presented to and discussed by carefully selected scientists and clinicians representing all disciplines from around the world. The resulting clinical and patient outcomes are then used in the development of definitive clinical guidelines published in the *International Journal of Oral and Maxillofacial Implants* (JOMI) to support AO members in their daily practices.

As the Academy's official scientific journal, JOMI is a frequently cited global resource for unparalleled original, basic and clinical applications of implant and tissue engineering innovation and technology, and is consistently rated as the number 1 membership benefit. Published by Quintessence, JOMI has continued to see a robust number of evidence-based abstract submissions over its 33-year history, and continues to expand our message globally.

AO's premier event, its Annual Meeting, is a comprehensive scientific program that provides dentists across all specialties the most predictable and proven techniques to integrate into their practices upon returning to their practices. You can't help but hear evidence-based dentistry mentioned over and over

again in the multitude of presentations given at this key forum for leading edge practices in the science underpinning implant dentistry.

As this issue of *Academy News* was in production, AO was scheduled to be in Toronto for a one-day "tribute" to the scholarly initiative hosted by the University of Toronto supported by the University of Göteborg. It was at the original two-day implant conference in 1982 where North American dental professionals were first introduced to the concept of osseointegration and the beginnings of predictably safe dental implant treatment. The 1982 meeting highlighted the work of Prof. **Per-Ingvar Brånemark**, whose evidence-based research was key to his success and in sparking a global sprint toward the unprecedented dissemination of osseointegration, including the subsequent formation of AO.

Now nearly four decades later, the Toronto meeting was held to "sustain clinical research to better understand the science of osseointegration, and to continue taking stock of both quantitative and qualitative research that underscores our professional integrity as an organization and as colleagues in the field of implant dentistry," a point recently made by Dr. **George Zarb**, Emeritus Professor at the University of Toronto and the principal organizer of the 1982 meeting. That lines up exactly with our current conversation about evidence-based dentistry.

Some of the major issues the AO Board will address in the coming year will be related to how we increase membership; membership activities and volunteer participation; evaluate the usage of social media as the right platform for communication to make the right impressions and engagements; and update the Academy's strategic plan to align with future trends.

We will continue working with universities to help promote our message and mission through strategic alliances and education, as reaching the younger minds is the very future of our organization. While our Annual Meeting is AO's hallmark event, re-evaluating this premier scientific educational meeting is also on our list of strategic priorities.

It is my goal - and hopefully my Board's goal - to advance the Academy of Osseointegration's brand moving forward. We are the premier organization in implant care, and I will do everything I can to assure we maintain our status and presence on the world stage of treatment.

I'm looking forward to a great year leading AO, representing my specialty of oral and maxillofacial surgery, and how we interface with other specialties and general practitioners to continue forging ahead in developing and promoting evidence-based dentistry for the benefit of our patients worldwide.



Dr. Jay P. Malmquist

AO mourns passing of Secretary Jeffrey D. Lloyd

The Academy's leadership was shocked by the sudden and unexpected April 9 passing of newly elected AO Secretary Dr. Jeffrey D. Lloyd, in Rancho Cucamonga, CA, after serving four years on the AO Board.

"Dr. Jeffrey Lloyd will be greatly missed by the AO Board of Directors," says Academy President Dr. **Jay P. Malmquist**, Portland, OR. "His unique blend of his passion and love of dentistry coupled with his love of family values, and ethics will make his absence a difficult void to accept."

A general dentist, Dr. Lloyd, 67, rose to prominence in the Academy as an active member of the Membership Committee, which he chaired from 2013 to 2015. He worked closely with AO Treasurer Dr. **Amerian D. Sones**, Dallas, TX, in starting the Membership Committee's very successful New Member Lunch program and coordinating postgraduate resident outreach programs. Just last year, Dr. Lloyd joined Dr. Sones again as co-chair of the new University Global Outreach Committee.

"When I think about him," Dr. Sones says, "I remember all the projects we brainstormed about, and I feel truly blessed to have had such a professional friendship based on trust and mutual respect. The synergy we had was very special. He was a colleague who quietly and efficiently got the job done, who was humble and never tried to embellish himself. He was a colleague who supported me and always offered positive encouragement. His family was everything to him. He enjoyed a rich and rewarding family life, and I will miss him very much."



Dr. Jeffrey Lloyd

Dr. **Russell D. Nishimura**, Westlake Village, CA, AO President when Dr. Lloyd was elected to the Board of Directors in 2015, remembers him as "a warm and altruistic man, always willing to do what was best for others before his own personal benefits. His personal success was cherished much more than his impressive professional activities and accomplishments."

As a board member, Dr. Lloyd served as liaison to both the Membership and Young Clinicians committees. He earned his AO Fellowship in 2017.

Dr. Lloyd joined AO in 1995 and soon became a very active member, serving on the GP Recruitment Task Force, as well as the Research Submissions, Strategic Vision, Finance and Audit, Continuing Education Oversight, and the 2016 Annual Meeting committees. He received his DDS degree from the University of Southern California and maintained a private general practice in Rancho Cucamonga. Dr. Lloyd was a clinical team leader and associate professor at Western University of Health Sciences, College of Dental Medicine, in Pomona, CA.

He is survived by his wife, Jackie, six children, and many grandchildren.

New Career Center comes to AO Mobile App

The Academy has launched its new Career Center, exclusively on the AO 365 mobile app. As an added benefit of AO membership, this new forum is available at no charge to members.

Employers may submit job descriptions of any length, which will be available on the mobile app for 30 days and renewable until the position is filled. AO acts as a third-party facilitator and does not interact with job applicants.

To submit a posting and for more information, snap this QR code and fill out a simple form on the AO website at osseo.org.



AO President Dr. Jay Malmquist pledges “united voice for implant care”; AO/OF elect 2019-2020 boards

Jay P. Malmquist, DMD, an oral and maxillofacial surgeon from Portland, OR, became AO’s newest president at the organization’s Annual Business Meeting in March in Washington, DC. As the Academy’s 33rd President, Dr. Malmquist succeeds Dr. **James C. Taylor**, a prosthodontist from Ottawa, ON, Canada at the helm of AO.

In his inaugural address, Dr. Malmquist stated, “It is my goal – and hopefully my Board’s goal – to protect the Academy of Osseointegration’s brand moving forward. We are the premier organization in implant care and I will do everything I can to assure we maintain our status and presence on the world stage of treatment. I feel

strongly that we should be the united voice that speaks for implant care throughout North America as we enter into the controversial areas of specialty recognition, certification and training for every doctor who aspires to use implant care to further the patient’s health.”

One new AO Director was also elected: **Robert R. Lemke**, DDS, MD, a board certified oral and maxillofacial surgeon from San Antonio, TX. Dr. **Jeffrey D. Lloyd**, general dentist, Rancho Cucamonga, CA, who had been serving as a Director, was elected AO Secretary at the meeting, then passed away suddenly and unexpectedly April 9. (See obituary on page 4).



The full 2019 – 2020 Board of Directors will be (officers front row, from left): Vice President: **Tara L. Aghaloo**, DDS, MD, PhD, an oral & maxillofacial surgeon from Los Angeles, CA; President-elect: **Clark M. Stanford**, DMD, PhD, a prosthodontist from Chicago, IL; Dr. Malmquist; Past President: **James C. Taylor**, DMD, MA, a prosthodontist from Ottawa, ON, Canada; Secretary: **Jeffrey D. Lloyd**, DDS, general practitioner from Rancho Cucamonga, CA (successor to be appointed due to his passing); Treasurer: **Amerian D. Sones**, DMD, MS, a prosthodontist from Dallas, TX; and Directors (top row, from left) **Robert C. Vogel**, DDS, a general practitioner from Palm Beach Gardens, FL; **Robert R. Lemke**, a board certified oral and maxillofacial surgeon from San Antonio, TX; **Hom-Lay Wang**, DDS, MSD, PhD, a periodontist from Ann Arbor, MI; **Jörg Neugebauer**, DDS, PhD, an oral surgeon from Landsberg am Lech, Germany; **Joseph P. Fiorellini**, DMD, DMSc, a periodontist from Philadelphia, PA; **Jeffrey Ganeles**, DMD, a periodontist from Boca Raton, FL; and Executive Director **Kevin P. Smith**, MA, MBA.



Also elected at the 2019 Annual Meeting were officers and directors of the Osseointegration Foundation board of directors. In attendance were (from left): Director Dr. **Jeffrey S. Ackerman**, Naples, FL; President Dr. **Hans S. Malmstrom**, Rochester, NY; Past President Prof. **Georgios E. Romanos**, Stony Brook, NY; Secretary/Treasurer **Wendy M. Croll Halpern**, Ambler, PA; and Vice President **Edward A. Marcus**, Yardley, PA. Not pictured but also elected were: OF Director Dr. **Andrea L. Henderson**, Los Angeles, CA; who will continue to serve with new directors: AO’s immediate past president, Drs. **James C. Taylor**, Ottawa, ON, Canada; **Russell D. Nishimura**, Westlake Village, CA; and **Franck Renouard**, Paris, France.



Inaugural AO Leadership Institute: Understanding approaches to different personalities

Throughout its history, the Academy of Osseointegration (AO) has recognized that every successful organization, whether a dental practice, academic department, or the Academy itself, depends on cultivating and developing current and future leaders.

In its most recent foray into leadership development, AO hosted its inaugural Leadership Institute on March 13, 2019, one day in advance of its 2019 Annual Meeting in Washington, DC. At this full day session, a select group of 20 AO members from across all specialties and all regions of the globe were invited to join the AO Board of Directors at this inaugural event.

"This was an excellent opportunity to learn not only from the speaker, but from international implant leaders who the AO is so fortunate to have as board members," said Dr. **Robert R. Lemke**, San Antonio, TX, the Academy's newest board member. "I hope to be able to listen to the needs of the members, our sponsors and each support staff and to make the AO serve their needs. It is such an honor to be on the board and working with leaders from all over the world. It makes each of us a better clinician."

No matter their professional and personal background, participants left this very dynamic session learning that good leadership requires not only knowing yourself. It also involves an understanding of how the strengths and weaknesses of different personality types, their communication needs, and the way they process information can be guided to arrive at mutually agreeable endpoints, even though they may view information from a different perspective. It's knowing what is important to them.

The inaugural leadership session, sponsored by Nobel Biocare, was facilitated by the high-energy presentation style of **Mary Ritz**, PhD, from Bold New Directions Training Solutions, a transformational learning organization based in Southampton, MA. This program was designed to help leaders and future leaders recognize the importance of influencing others from a place of certainty and confidence,

increase their capacity to grow inner leadership traits and skills via interactive and experiential leadership training activities.

"Part of what I enjoyed from Mary's energetic presentation was that she was able to categorize different leadership styles and verbalize how different personalities can work with each other and against each other," said AO Fellow Dr. **John A. Lupovici**, New York, NY. "It's a nature vs. nurture situation. You can improve to the extent that allows you to effectively connect with others. This can be applied whether you are presenting at a podium, chairside with a patient, or on a personal level in daily life."

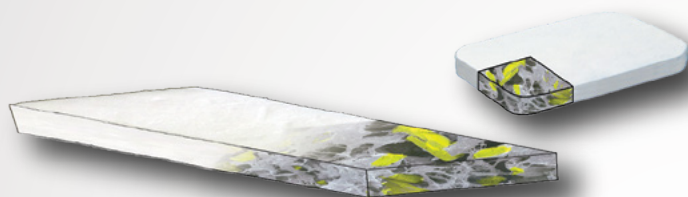
Also discussed was improving leadership skills in coaching and mentoring staff. "Fitting the right personality type to the right job is critical when hiring new employees or assigning tasks to current staff. Without knowledge of an individual's personality type, their strengths may be missed and not maximized," said *Academy News* Editor Dr. **Harriet K. McGraw**, Harbor Springs, MI.

There are also generational differences in how information is communicated and processed. "What I found most beneficial from this session is about the importance of the ability to listen. I now have a better appreciation for millennials and their usage of social media to communicate," said AO Fellow Dr. **Daniel I. Taub**, Philadelphia, PA.

In the end, the overall response was this was a very beneficial session. "I value AO tremendously and enjoy giving back my time. The collaboration at this session was very cohesive and collegial. It was a great course to strengthen my skills and continue giving back to the Academy," concluded Dr. Lupovici.

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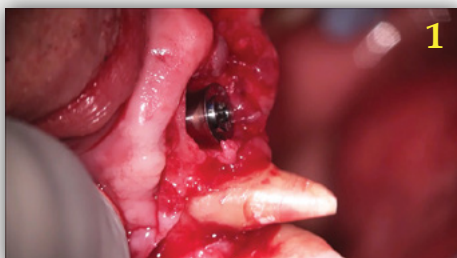
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Clinical Case Example



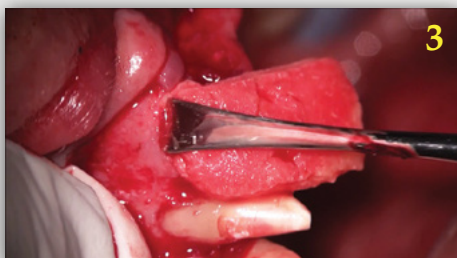
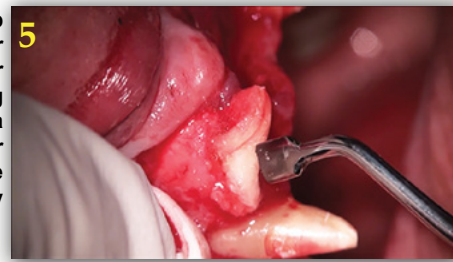
1 Implant is placed lingually following extraction. OsteoGen® Strip will be used to fill gaps and to reinforce the buccal wall

The OsteoGen® Strip is a hydrophilic material that can be hydrated with patients blood and substantially compressed to fill a variety of defects



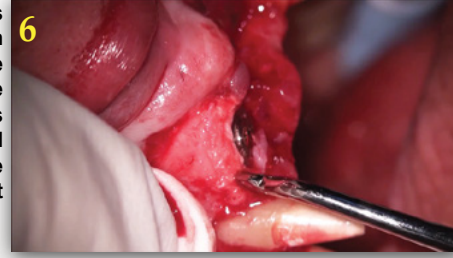
2 OsteoGen® Strip is hydrated with patients blood from the surgical site and, if desired, autologous serum or other growth factors prior to delivery

OsteoGen® Strip can be folded after hydration and prior to or during placement with a blunt instrument for additional bone width and stability



3 Buccal plate is reinforced by feeding the OsteoGen® Strip downwards in between the implant and the buccal wall

OsteoGen® Strip is in place which reinforces the buccal wall while grafting the gaps between the buccal plate and the implant



Clinical images courtesy of Robert Miller, MA, DDS, FACD, DABOI

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All on “X”: How do you define the “X” factor for your patients?

By Mehrdad Favagehi, DDS, MS, Academy News Editorial Consultant

Editor’s Note: Dr. Favagehi’s article is the first in a new Academy News series, entitled “Factors Affecting Outcomes.” This article is a follow up to his 2018 AO Annual Meeting presentation and subsequent AO live webinar, “Psychological Stress: The Impact on Wound Healing.” Future articles in this series will explore and discuss how each individual patient’s physical, psychological and socio-psychologic health factors can affect treatment outcomes.

“All on 4” or “All on X” are catchy phrases describing a treatment approach for implant patients. But, the “All on-X” phrase can represent much more than that.

As we work up patients for an “All on X” type of procedure, or any procedure involving surgery, we collect information about the patient’s medical and dental history, anatomy, medications, and physiology. We may order a CT scan to see the bone tomography or density. But do all patients heal the same way? Of course not. It’s no secret that patients with similar anatomy receiving identical treatment, for example “All-on-4,” may have completely different treatment outcomes.

Smoking and type II diabetes are recognized as major risk factors for implant treatment failure. Both can have emotional and social root causes. Recognizing the psychosocial aspect of patient behavior may be as important as recognizing the patient’s physical condition and surgical needs. All of these factors affect healing and treatment outcomes.

Medical schools have included psychology and psychiatry as part of their standard curriculum and require medical students to rotate through psychiatry in the same way that they make general surgery a mandatory rotation.

In dentistry, we typically don’t have formal training in psychology. But as dental clinicians, most of us have significant practical expertise in psychology beyond what we learned in college. For those who haven’t been following the psychoneuroimmunology literature, I’d like to briefly review selected groundbreaking scientific work that can be significant to us as implant clinicians.

Landmark research done in this area includes a multidisciplinary, prospective, controlled study published in *The Lancet*¹. A research team consisting of an endocrinologist, a periodontist, a psychologist, and immunologists compared healing of a standardized skin wound in a cohort of patients with high levels of psychological stress vs. a matched

control population. To choose the “high stress” group, they looked at scientific literature to find that the cohort with the highest scores for psychological stress was caregivers of dementia patients.

The caregiver group representing “high stress” showed a delay in healing of about 25 percent for a standardized 3.5 mm punch biopsy skin wound.¹ Similarly, dental students with a 3.5 mm punch biopsy palatal wound during final exam week healed 40 percent slower when compared to the same procedure performed during summer vacation. In both cases, the delay in wound healing in the high stress groups was associated with dysregulation of Interleukin-1 (IL-1), widely recognized by immunologists as a potent pro-inflammatory mediator².

Interestingly, just as in wound healing, the link between chronic periodontitis and various systemic conditions may be associated with differences in the expression of inflammatory mediators such as IL-1³.

When it comes to success and failure in implant dentistry, it’s true to say that all is on “X” as long as “X” is much more than merely a number. The “X” factor should be expanded beyond the “A-P spread” of a prosthesis and should also include the patient’s physical and psychological health. As we perform the diagnostic work-up of a patient for the All-on-X or other surgeries, we should also take into account their socio-psychologic health, because it may be more important than the number of implants we place for them.



1. Slowing of wound healing by psychological stress Kiecolt-Glaser, J.K.; Marucha, P.T.; Mercado, A.M.; Malarkey, W.B.; Glaser, R. *The Lancet*, 1995, Vol.346(8984), pp.1194-1196
2. Mucosal Wound Healing Is Impaired by Examination Stress Marucha, Phillip T.; Kiecolt-Glaser, Janice K.; Favagehi, Mehrdad *Psychosomatic Medicine*, 1998, Vol.60(3), p.362-365
3. Springer-Verlag Berlin Heidelberg 2016 1 R.G. Craig, A.R. Kamer (eds.), *A Clinician’s Guide to Systemic Effects of Periodontal Diseases*, p.117

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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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Highlights from the Academy's 2019 Annual Meeting

Clinical excellence, monumental setting

With a backdrop of countless historical monuments, memorials and sites, AO's 34th Annual Meeting saw more than 1,700 attendees in Washington, DC. "Current Factors in Clinical Excellence" encompassed 83 presenters from 17 countries providing scientific sessions, including surgical and prosthetic tracks with "10 Years After" plenary retrospectives. OF Student Travel Grant recipients were among more than 250 e-poster presenters from around the globe showcasing evidence-based research. Socially, registrants attended AO's marquis President's Reception at the National Museum of Natural History, part of the preeminent Smithsonian museum campus.

01 Registrants and guests viewed many permanent and one-of-a-kind exhibits during the 2019 President's Reception.

02 Saturday's "Lunch with the Masters" on Papillae Regeneration with Dr. Patrick Palacci was one of several sold out sessions.

03 E-poster stations convened throughout the meeting, providing attendees with many opportunities to interact.

04 More than 120 corporate exhibitors displayed the latest dental products and technologies, attracting large crowds in the exhibit hall.

05 "It has been an honor to shape the present and future of global implant dentistry with you," said Dr. James C. Taylor during his presidential address.

06 The Walter E. Washington Convention Center provided many places for attendees to re-connect and chat about topics of the day.

07 Students from Nova Southeastern University attended the New Member Lunch with Drs. Jeff Ganeles and Maria Hernandez. Welcome to AO!

08 Full-day Hands on Workshops provided attendees with unique learning opportunities and a jump on their Annual Meeting experience.

09 Five individuals achieved Fellowship status, shown flanked between Drs. Jay Malmquist (far left) and James C. Taylor (far right).

10 U.S. Navy Captain Jonathan Forsberg, MD, PhD from Walter Reed National Military Medical Center provided the Keynote.

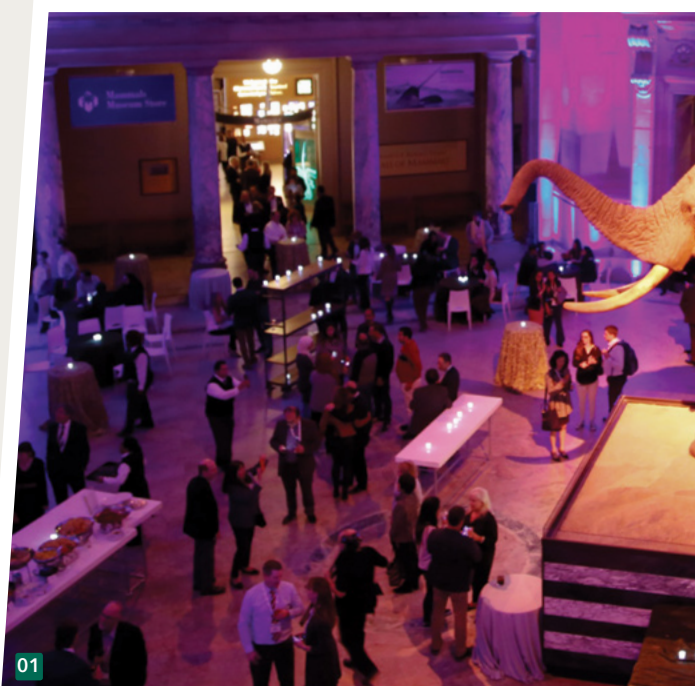
11 AO Board leadership officially transitioned to Dr. Jay P. Malmquist (right) at Saturday's Annual Business Meeting.

12 AO Treasurer Armerian D. Sones (center) joined with her students from Texas A&M College of Dentistry during the meeting.

13 Attendees included 25 recipients of Student Travel Grants, provided by the Osseointegration Foundation and Anker Dental Systems.

14 More than 200 residents and recent graduates packed Cuba Libre for the annual Young Clinicians reception.

15 2019 Program Chair Dr. Franck Renouard (left) and Dr. James Taylor enjoyed the festivities of a successful Annual Meeting.



01



05



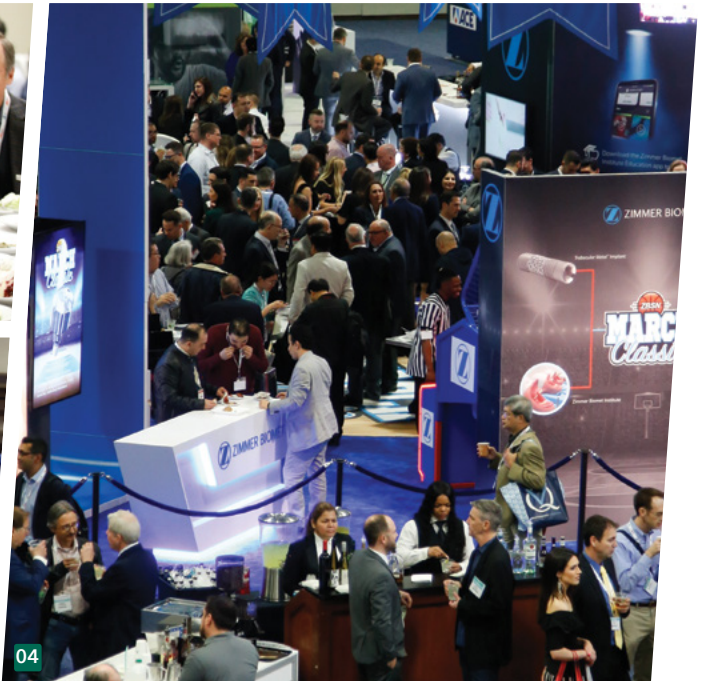
06



09



13



AO awards honor career excellence, research, service, achievement

Awards honoring the highest standards of career excellence, innovative research, service to the field of osseointegration and the Academy were presented to many AO members from around the globe at its 2019 Annual Meeting in Washington, DC.



Dr. Canullo with Dr. Steven Eckert, Editor-in-Chief, JOMI (left) and AO Immediate Past President Dr. James C. Taylor.

Oral and maxillofacial surgeon Dr. **Luigi Canullo**, Rome, Italy, received the **2018 William R. Laney Award** for the best article published in the *International Journal of Oral and Maxillofacial Implants (JOMI)* in the past year. He was invited to present his research entitled, "Association Between Clinical and Microbiologic Cluster Profiles and Peri-implantitis," at the 2019 Annual Meeting. Dr. Canullo summarized the importance of his paper by saying, "As clinicians, we should stop seeing peri-implantitis as only a breakdown in the physiological homeostasis between the bacterial load and the host defenses."

Other 2019 award winners included:

AO Certificate in Implant Dentistry:

Drs. **Harry Randel** and **Leslie Stone Hirsh**, both of Philadelphia, PA. (See article on page 13).

Nobel Biocare Brånemark Osseointegration Award:

Dr. **Jan T. Lindhe**, former chair of the Department of Periodontology at Göteborg University, Göteborg, Sweden, became the 12th recipient of this annual award bestowed by the Osseointegration Foundation, AO's philanthropic arm. (See article on page 16).

Best Presentation Awards: Six researchers were recognized by a committee of their peers for clinical and scientific research:

Best Oral Clinical Presentation:

Katherine Roll, DMD, MSD, Wexford, PA

Best Oral Scientific Presentation:

Laura Nelson Rabe, DDS, Houston, TX

First Place E-poster:

Hussein Basma, DDS, Birmingham, AL

Second Place E-poster:

Mohammed Atef, BDM, MSc, PhD, Cairo, Egypt

Best E-poster Case Presentation:

Polly PoNing Huang, DMD, Davie, FL

Best Clinical Innovations:

Akira Takebayashi, DDS, Okegawa Japan

2019-2020 Osseointegration Foundation Research Grants:

Two first place grants of \$30,000 each were awarded. These research teams will present their results at AO's 2020 Annual Meeting.

1st Place Basic Science:

Jonas Becktor, DDS, PhD, Malmo University, Sweden

1st Place Applied Science:

Irina Dragan, DDS, MS, Tufts University School of Dental Medicine, Boston, MA

Fellows: Fellowship status in the Academy is obtained by demonstrating a commitment to the field of osseointegration in both academics and service to the Academy. Recipients included (see article on page 14):

Les J. Kalman, DDS, BSc, assistant professor, Restorative Dentistry, and faculty lead, Dental Outreach and Community Service with the Schulich School of Medicine & Dentistry at the University of Western Ontario.

Edward D. Karateew, DDS, BSc, a clinical associate professor and post graduate director of Advanced Specialty Education in the Department of Periodontology at the University of Illinois at Chicago, where he is in private practice.

Todd R. Schoenbaum, DDS, associate clinical professor for the division of Constitutive and Regenerative Sciences, and director of Continuing Dental Education at the UCLA School of Dentistry, with a clinical practice in Brentwood, CA.

Takashi Sumi, DDS, PhD, in private practice in Ichinomiya Aichi Japan. He received the AO Best Presentation Award in 2013 and is the AO Ambassador for Japan.

Daniel I. Taub, DDS, MD, program director of Oral and Maxillofacial Surgery at Thomas Jefferson University in Philadelphia, PA.



OF 2018-2019 Applied Science Grant recipient Dr. Hanae Saito with OF President Prof. Georgios Romanos (left) and Dr. James C. Taylor after presenting her results.

Please see the 2019 Annual Meeting collage on pages 10 - 11 for corresponding photos.

Two Philadelphia prosthodontists receive prestigious AO Certificate in Implant Dentistry

Two prosthodontists from Philadelphia, PA became the latest recipients of the Academy's prestigious Certificate in Implant Dentistry during the Opening Symposium of its 34th Annual Meeting in Washington, DC. They were Harry Randel, DMD, and Leslie Stone Hirsh, DDS.

The AO Certificate in Implant Dentistry represents the highest standards of excellence in implant dentistry, and distinguishes practitioners' continuing education efforts and knowledge to patients and colleagues around the globe.

Dr. Randel, a prosthodontist in private practice dedicated to advanced restorative dentistry stated, "The Academy of Osseointegration is the premier dental implant organization in the United States. The qualifications for the certificate program are rigorous, which make it a privilege to have been accepted. This credential recognizes to the AO membership and to the dental community the achievement of a high level of proficiency in implant dentistry. I am honored to have been granted this prestigious certificate as I always strive, both personally and professionally, to provide to my patients the highest level of quality care."

"I am deeply honored to receive the Academy of Osseointegration's Certificate in Implant Dentistry, which represents the outstanding collaborative and interdisciplinary care we can offer patients and dedication to the highest standards of excellence in Implant Dentistry," said Dr. Stone Hirsh, a clinical associate professor of Restorative Dentistry at the University of Pennsylvania School of Dental Medicine, and in private practice of restorative, implant and esthetic dentistry.

To achieve the Certificate, applicants are evaluated on three criteria: continuing education and core knowledge, clinical skills, and commitment to AO. As part of the application process, Drs. Stone Hirsh and Randel submitted four case presentations covering the following categories: single tooth, fixed partial denture (fixed bridge), full arch fixed reconstruction, and over denture, as well as immediate loading. They have also met the requirement of membership in AO for three consecutive years and attended at least two Annual Meetings during that time.

Since 2016, AO members from around the globe have been invited to achieve the Certificate as a key way to demonstrate their education

and experience and affirm the excellence of their core knowledge and clinical skills in the field of implant dentistry.

Dr. **Amerian D. Sones**, AO treasurer and board liaison to the Fellowship and Certificate in Implant Dentistry Committee said, "The certificate is attainable by all. Considering the accolades one will receive from the community, peers and patients, why wouldn't you apply? Make 2019 your year to submit the requirements for the AO Certificate in Implant Dentistry!"



Drs. Randel (left) and Stone Hirsh

Five achieve AO Fellowship status

Five individuals were honored for achieving Fellowship status in the Academy of Osseointegration (AO) at its 2019 Annual Meeting Opening Symposium. The new Fellows included:



Les J. Kalman, DDS, BSc from Komoka, ON, Canada, assistant professor, Restorative Dentistry, and faculty lead, Dental Outreach and Community Service at the Schulich School of Medicine & Dentistry at the University of Western Ontario. A member of the Academy since 2006,

Dr. Kalman has served on AO's Clinical Innovations and Research Submissions committees, and is currently on the E-poster Committee. He has conducted 23 invited presentations, including twice as an e-poster presenter at AO Annual Meetings. Dr Kalman has had nearly 40 articles published.



Edward D. Karateew, DDS, BSc, is a clinical associate professor and post graduate director of Advanced Specialty Education in the Department of Periodontology at University of Illinois at Chicago, as well as in private clinical practice in Chicago. Prior to relocating to his new academic life in

Chicago, Dr. Karateew maintained a private practice in Vancouver, BC, Canada for 20 years. An AO member since 2006, Dr. Karateew has served on the Osseointegration Foundation's Charitable Grants Committee for five years, including as chair for three. He is a current member of AO's Finance and Audit Committee and participated in AO's 2018 Summit. Dr. Karateew has made 140 major presentations and is widely published, recently having completed his textbook, *Implant Aesthetics*.



Todd R. Schoenbaum, DDS, is associate clinical professor for the division of Constitutive and Regenerative Sciences, and director of Continuing Dental Education at the UCLA School of Dentistry, in addition to his clinical practice in Brentwood, CA. An AO member since 2012, he is

currently a member of AO's Fellowship & Certificate in Implant Dentistry Accreditation Committee, has served on the Research Submission Committee, and is a co-founder of the AO UCLA student chapter. Dr. Schoenbaum has been published 51 times in peer reviewed journals, textbooks, and clinical case reports, and serves as a reviewer for the *International Journal of Oral and Maxillofacial Implants (JOMI)*. He has presented at nearly 150 invited lectures and seminars, including AO's 2016 Annual Meeting.



Takashi Sumi, DDS, PhD, in private practice in Ichinomiya Aichi Japan, acquired his dental license in 1997 and subsequently studied prosthetic dentistry. His research activities include the importance of the implant-abutment interface. Dr. Sumi has been published 20 times and has presented

at many meetings in Japan and around the world. Relative to AO, he received the Best Presentation Award in 2013 and has served as a committee member and AO Ambassador for Japan. Dr. Sumi has organized AO Charter Chapter meetings in Japan, providing many Japanese dentists the opportunity to learn about the Academy's activities.



Daniel I. Taub, DDS, MD, is associate professor at the Sidney Kimmel Medical College at Thomas Jefferson University in Philadelphia, PA, where he is also vice chair and program director of the Department of Oral and Maxillofacial Surgery. An AO member since 2007, Dr. Taub has served on five AO

committees, and is currently chair of the Website Education Committee. Over the past 10 years, he has given more than 20 invited lectures, including AO Annual Meetings as a plenary speaker and e-poster presenter, and to the AO Study Club at University of Pennsylvania School of Dental Medicine. Dr. Taub has had 13 original articles accepted for publication in peer reviewed journals in addition to several abstracts and chapters in books.

Fellowship in the Academy is obtained by demonstrating a commitment to the field of osseointegration. Reflecting the importance of science and service embodied in its founding principles, AO established a Fellow membership category to honor those members who have excelled in both academics as well as service to the Academy.

"While not a form of credentialing, attaining Fellowship in AO says more about our members than mere case presentations or examination of knowledge," said **Lambert J. Stumpel**, DDS, Chair of AO's Fellowship & Certificate in Implant Dentistry Accreditation Committee. "It sets the standard for those who take their continuing professional education seriously, have a strong commitment to the field of implant dentistry, and recognize the incredible value that volunteerism and philanthropy have to the profession."

How Oregon dental team gave Mrs. Ginger Christmas Beattie a new life

By the time Mrs. **Ginger Christmas Beattie** met AO member Dr. **Despoina Bompolaki** at Oregon Health & Science University, Portland OR, for treatment in 2015, multiple attempts to restore her with a traditional complete denture had failed, primarily due to extreme maxillary ridge resorption. Not only was she worried about how her teeth looked, she also found it hard to eat every day. An implant-retained prosthesis was really her only option for regaining function, but like anyone on a low fixed income, she could not afford one.



"I was aware of the Osseointegration Foundation (OF) Charitable Grant program and always valued the great opportunity it provides us as practitioners to help patients who otherwise could not afford implant therapy," prosthodontist Dr. Bompolaki says. After Dr. Bompolaki consulted with her periodontist colleague Dr. **Harjit Sehgal**, they decided to apply for a grant. "When we received the positive response, all of us were thrilled!" Dr. Bompolaki remembers.

In January 2017, Mrs. Beattie had bilateral maxillary ridge augmentation by ridge-split and ridge-expansion techniques using Piezosurgery. Dentsply-AstraTech Osseospeed TX implants were simultaneously placed using a surgical guide that was based on the proposed tooth setup. Implants at the #5 and #13 sites were placed in a tilted fashion in order to bypass the maxillary sinuses bilaterally and to achieve a more favorable A-P spread.

Since the facial bone was significantly deficient and the apical portion of the implants was exposed on the facial, both intraosseous and extraosseous ridge augmentation was performed. A mix of harvested autogenous bone, allograft (Dentsply-Symbios MTF) as well as xenograft (Dentsply-Symbios Xenograft) were used and stabilized with resorbable barrier membranes (Dentsply-Symbios Osteoshield).

Mrs. Beattie healed uneventfully and was seen for stage 2 implant surgery after four months to have healing abutments placed. Further contour grafting was done around the facial of all implants with xenograft (Geistlich Bio-oss) and the soft tissue was repositioned to provide adequate keratinized mucosa on the facial.

It was determined that all implants needed 20° Uniabutments of either 2 or 4mm height. Once the

appropriate Uniabutments were inserted and torqued to place, an abutment-level impression could be taken using a custom tray and vinyl-polysiloxane material. On the definitive cast, a tooth setup was completed and subsequently tried in the patient's mouth to verify ideal tooth positioning for the final prosthesis. The definitive cast, along with the proposed setup, was sent to the Nobel Biocare milling center in Mahwah, NJ, where the titanium substructure for the final fixed prosthesis was fabricated.

Denture teeth were set on the framework, and the prosthesis was processed and finalized for delivery. At the same time, the acrylic base and denture teeth of the mandibular removable prosthesis were also replaced in order to provide satisfactory extension, stability and support for the partial along with a proper occlusal relationship with the maxillary prosthesis.

In April 2019 Dr. Bompolaki saw Mrs. Beattie, now 71, for a follow up and the patient once again expressed her satisfaction with the treatment that she received. "Having these implants and new teeth has changed the way I smile and the things I can eat. It is so important that I can be in public and not be concerned about my teeth. You have no idea how hard it was before, just to eat what might be considered normal food. I cannot tell you how happy I am to have been helped in this way," says the former assisted living caregiver, day care center owner, and active community volunteer.

Dr. Bompolaki has found it very rewarding to see her patient having a "normal" life again. "Ginger is now able not only to eat properly, but also smile with confidence and once again fully enjoy every aspect of life. There is no question that this treatment tremendously improved her quality of life. We are all grateful for this opportunity given by the OF and we definitely encourage members to apply. Financial hardship should not be an obstacle to achieving the great positive impact implant therapy can have on our patients' lives."

*Drs. Bompolaki and Sehgal thank their dental laboratory technicians, **Raffi Abrahamian CDT** and **Hans Peter CDT** (Custom Dental Prosthetics Inc., Gladstone OR), **Dentsply AstraTech** for donating implants and grafting materials, **Nobel Biocare** for fabricating the titanium substructure at no cost, and **Ivoclar Vivadent** for donating the denture teeth for both prostheses.*



Mrs. Beattie

A special ceremony befitting a prestigious awardee

For Prof. **Jan T. Lindhe**, former chair of the Department of Periodontology at Göteborg University, receiving the 12th Annual Nobel Biocare Brånemark Osseointegration Award could be described as a full circle moment.

"It (this award) is a very important step in my career, something special," said Prof. Lindhe. "My early collaboration with Prof. **P-I Brånemark** was of critical importance for my future professional life."

Unable to travel to the Academy of Osseointegration's (AO) Annual Meeting where the award is normally presented, Prof. Lindhe instead received the Brånemark award medallion at Göteborg University from Osseointegration Foundation (OF) President **Georgios E. Romanos**, DDS, PhD, Stony Brook, New York, who traveled to Sweden specifically to make the presentation on February 18, 2019.

Fittingly, Prof. Lindhe was bestowed with this prestigious award in front of a statue of one of his first and most important teachers in biomedical research - Prof. Per-Ingvar Brånemark - outside the main lecture hall of the Sahlgrenska Academy at Göteborg University on the campus for medicine, where the Swedish research physician discovered osseointegration. The statue was a gift to the University from Nobel Biocare. This annual award is made possible by a grant from Nobel Biocare and bestowed by the OF, the philanthropic arm of AO.

At the ceremony and reception hosted by Nobel Biocare's Nordic Division, attendees included Prof. Lindhe's wife, **Ann**, several family members and many dignitaries, among them Mrs. **Barbro Brånemark** (widow of Per-Ingvar); Prof. **Agneta Robertsson**, Vice Deputy Dean of the Department of Pediatric Dentistry from Göteborg University; Harrieth Sundaeus, Head of HR and her team from Nobel Biocare; and Göteborg Profs. **Ingemar Abrahamsson, Tomas Albrektsson, Tord Berglundh, Ingvar Ericsson, Ulf Lekholm**, and **Jan Wennström**, Prof. Emeritus, Department of Periodontology. Drs. Albrektsson and Lekholm are also previous winners of this prestigious award.

After arriving in Sweden in advance of the award ceremony, Prof. Romanos was picked up at his hotel by Prof. Lindhe for some sightseeing - which turned out to be a private, Sunday afternoon tour of the University, including the Sahlgrenska Academy. Prof. Lindhe showed him many points of interest, including his old and new offices, the research lab, the Department of Periodontology, and signed copies of both volumes of "Clinical Periodontology and Implant Dentistry" (by Lang and Lindhe, 6th edition). Afterwards, Prof. and Mrs. Lindhe graciously hosted Prof. Romanos for dinner in their home.

Prof. Romanos described the ceremony and his trip as "a very unique experience and very eye opening. This was all made possible because of the teamwork of AO and the OF. It was an honor for me to be there and present this award to Prof. Lindhe, a very humble and kind man."

Professor Lindhe received his LDS degree from the Royal School of Dentistry, Malmö, Sweden. He completed graduate training in the Department of Roentgenology, Department of Oral Surgery, and Department of Periodontology at University of Lund, Sweden, where he received OD and PhD degrees in 1964. In 1983, he received his DMD degree from the School of Dental Medicine, University of Pennsylvania, Philadelphia, PA. Professor Lindhe was professor and chairman, Department of Periodontology, at the University of Umeå, Sweden, before appointment to the same position at Göteborg University. He also served as dean of the School of Dentistry at Göteborg and the School of Dental Medicine at the University of Pennsylvania. Professor Lindhe has authored more than 400 original research publications, six textbooks, and many textbook chapters.

As part of the award ceremony, the annual recipient delivers a presentation at the Osseointegration Foundation's Titanium Breakfast during the Annual Meeting. A video of Prof. Lindhe's 20-minute presentation may be viewed via the Academy's website: <https://osseointegration.org/titanium-society/>.



Profs. Romanos (left) and Lindhe

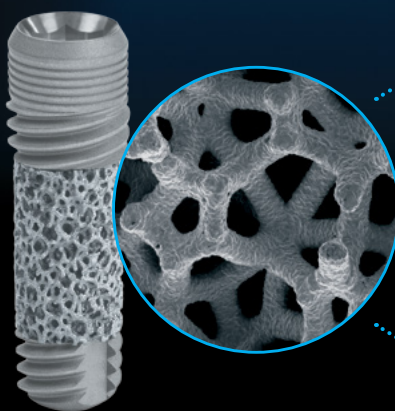
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AO founder, implant pioneer Dr. Paul H.J. Krogh passes away

AO lost one of its founding leaders when oral surgeon Dr. **Paul H.J. Krogh** passed away in February at his home in Bethesda, MD, at age 84.

Working with his close collaborator, the late Dr. **Daniel Y. Sullivan**, under the supervision of the late Prof. **Per-Ingvar Brånemark** in 1982, Dr. Krogh placed the first titanium endosseous implants in the U.S. In 1988, he became the Academy's second president. He was proud to present Dr. Brånemark a beautiful porcelain Globe of Peace when he was named AO's first Honorary Fellow the following year.

In 1985, when the newly organized American Academy of Osseointegration held its first formal meeting in New York, Drs. Krogh and Sullivan (an AO president eight years later) were keynote speakers. Dr. Krogh was also a past president of the American Association of Oral and Maxillofacial Surgeons (AAOMS).

A native of Washington, DC, Dr. Krogh attended Washington and Lee University and the University of North Carolina Dental School. He followed his father, Harold W. Krogh, into dentistry and took over the practice in 1966. He was known as "painless Paul," for his expertise in extracting third molars. He had a long relationship with the Washington Hospital Center, where he held positions as a

practicing physician, Chief of Oral Surgery, and lecturer emeritus.

After retirement from private practice, he participated in the Remote Access Medical Volunteer Corps, providing free dental care to uninsured people across the U.S.

He was predeceased by his wife Dorothy (Dot) and is survived by their children Paul, Peter, and Kay, and seven grandchildren.



Dr. Paul Krogh



Dr. Krogh and his wife, Dot, are pictured with the Globe of Peace he presented to Prof. Brånemark in 1989.

AO events and CE calendar



June 12

Live Webinar: "Managing Implant Complications"
David S. Harris, RCS, RCSI

June 20

AO Symposium with the International Association of Dental Research (IADR): "Developments in Osseointegration," Vancouver, BC, Canada

- "The Effect of Systemic Health on Implant Osseointegration"
Tara L. Aghaloo, DDS, MD, PhD
- "Beyond Radiographs: Probing Nanoscale Osseointegration in 4D"
Kathryn B. Grandfield, MSc, PhD
- "The Role of Immune Cells in Control of Bone Regeneration and Tissue Engineering"
Lyndon F. Cooper, DDS, PhD

August 20

Live Webinar: "Managing Immediate Implants & Immediate Provisionalization in Severely Compromised Sites"
Jeannette Keng L. Chua, BDS, MAC, MS

September 4

Live Webinar: "Management of Failing Implants in the Aesthetic Zone"
Bach T. Le, DDS, MD

September 6

7th Annual AO Symposium with the FDI World Dental Congress: "Advances in Clinical Implant Dentistry", San Francisco, CA

- "Grafting Large and Small Alveolar Defects With Bone Proteins and Blood Modifiers Using Ti Mesh Constructs"
Jay P. Malmquist, DMD
- "Critical Evaluation of Soft Tissue in Implant Dentistry for Long-term Crestal Bone Maintenance"
Alina Krivitsky, DDS
- "Fixed Hybrid Prosthesis: The Cumulative Experience of Over 500 Cases"
Lambert J. Stumpel, DDS

September 25

Live Webinar: "Troubleshooting With Soft-tissue Complications around Implants"
Giovanni Zucchelli, DDS, PhD

Mentor/mentee connections share career advice, AO benefits

By Harriet K. McGraw, DDS, Academy News Editor

Because AO is recognized for the quality, evidence-based focus of its meetings and other resources, **Daniel Taub, DDS, MD**, an active member and Fellow in AO, shares the benefits of the organization with younger clinicians. As program director of Oral and Maxillofacial Surgery (OMFS) at Thomas Jefferson University, he has mentored many residents, one of whom is **Sung Cho, DMD**.



HKM: Dr. Taub, how did you come to be a member of AO?

DT: Prior to my OMFS training, I completed a general practice residency (GPR) at Albert Einstein Medical Center in Philadelphia. I was encouraged by the faculty there to join AO. Since then, I have encouraged residents in the OMFS program I direct to attend meetings and become members of AO.

HKM: Dr. Cho, how has Dr. Taub influenced your career path?

SC: Dr. Taub's persistent thirst for knowledge is infectious to the people around him. Not only did I spend years as one of his residents, but I also stayed on as a junior attending faculty at Thomas Jefferson University for several years. Dr. Taub

inspired me to continue seeking additional education, which is why I currently divide my time between my private practice in New Jersey and Rutgers School of Dental Medicine as a member of the faculty in the Oral & Maxillofacial Surgery Department. This has allowed me to stay at the forefront of research and technology, ultimately resulting in the delivery of optimal patient care.

HKM: What are the benefits of AO that you share as mentor/mentee?

DT: The meeting format provides oral surgery residents the opportunity to participate in non-surgical lectures. Most meetings surgeons attend focus exclusively on surgical topics. At AO, one is able to listen to high-level speakers sharing the restorative and laboratory side of the implant world. Many of the residents I have encouraged to attend have also enjoyed presenting their posters and abstracts at annual meetings. AO also fosters a great opportunity for meeting colleagues and developing friendships with them.

SC: Every time I attend an AO meeting, I come away with more knowledge than other implant conferences. The combination of OMFS's, periodontists, prosthodontists and researchers expose me to many different views. Many of the clinical techniques and treatment planning information I learn at AO meetings elevate me to be a better surgeon. Dr. Taub and I share this belief and continue to strive to improve ourselves. I am a more knowledgeable surgeon today than I was ten years ago and want to be an even better one ten years from now.

HKM: How has your mentor/mentee relationship evolved over time? Has it become one where you now learn from each other rather than one of teacher/student?

DT: We may discuss more complicated implant cases and reasons why a case has failed. It is always important to review with residents reasons for failure and identify how to succeed in the future. The mentor mentee relationship always evolves over time as the mentee gains clinical and academic proficiency.





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