

Interview with Dr. George Zarb

As part of this special edition on prosthodontics, *JCDA* caught up with Dr. George Zarb to talk about the milestones and major developments of his distinguished career in clinical academia.

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JCDA: When you were living in Malta, why did you choose to study dentistry?

Dr. George Zarb (GZ): The war years in Malta had led to an accelerated secondary education for many of my generation. We were in a hurry to move on to university and the availability of a new dentistry course in the medical school at the Royal University of Malta offered a quick way to obtain a medical specialty. The curriculum was based on the highly respected British university system and Maltese graduates were granted reciprocity in that country. As a result, most dental graduates were expected to take their fellowships in the United Kingdom before returning to practise in Malta. I was 21 when I finished my first dental degree and envisaged a clinical academic career which went beyond the traditional “colonial” patterns of the day.

JCDA: Who were your biggest influences during your time in Malta?

GZ: I trained in what was then the smallest English-speaking dental school in the world, a scholarly version of the one-room schoolhouse. It was led by an extraordinary visionary, Professor John Mangion, a physician/dentist with advanced British qualifications. He sought to instill in his graduating class (about 4 dentists every 3 years) the conviction that the size and global reputation of a dental school was not proportional to the excellence of its product.

Professor Mangion was one of a small number of individuals whose vision ultimately had a profound impact on my career. His overall philosophy of dental scholarship was one in which its essential components — education, patient service and research — were subjugated to the whole, a concept of unity dominated by

the synergy between surgery and prosthodontics. He encouraged me to bypass the obligatory period of study in the U.K. and to go to North America instead. I was awarded a Fulbright Scholarship in 1960 and began my graduate work in restorative dentistry and prosthodontics at the University of Michigan.

JCDA: How did you eventually end up living in Canada?

GZ: The terms of my Fulbright Scholarship demanded a 2-year absence from the United States upon completion of my master’s studies and an American DDS. So my wife and I moved to Toronto, where I divided my time between a part-time general practice and prosthodontic teaching. I subsequently spent an additional year of graduate prosthodontics with the late Carl Boucher at Ohio State University, supported through a Canadian Fund for Dental Education Fellowship. During this time I obtained a second master’s degree and was appointed assistant editor to the *Journal of Prosthetic Dentistry* by Dr. Boucher. I was offered a full-time staff position at the University of Toronto in 1966 and embarked upon my Canadian academic career and the challenge of helping establish my discipline as a specialty in both the country and the province.



Dr. George Zarb (seated) with 2 of his long-time University of Toronto colleagues, Dr. Aaron Fenton (left) and Dr. Jim Anderson.

JCDA: What were your first impressions of Canadian dentistry?

GZ: In the 60s, Canadian prosthodontics lagged behind the American scene. The field was regarded as a discipline of expert builders rather than one of intra-oral architects. I was very fortunate in my choice of colleagues on the political and academic fronts, and worked closely with Dr. Donald Kepron from McGill University and Dr. Douglas

Chaytor from Dalhousie University to raise the profile of the speciality. We co-founded the Association of Prosthodontists of Canada, an undertaking that would not have been possible without their enormous drive, integrity and vision.

JCDA: Can you elaborate on the state of prosthodontics in Canada at that time?

GZ: Our country's academic infrastructure and lack of graduate programs precluded a correct understanding of the discipline's extraordinary potential. The popular belief was that a motivated dentist who attended continuing education courses could become an "intraoral architect" without the need for rigorous graduate training. The University of Toronto, with its remarkable and diverse pool of scholarly talent, offered an amazing opportunity to rethink the discipline at the highest intellectual level. My strongest ally in this mission was Dr. Aaron Fenton, and later Dr. Jim Anderson, as we sought to articulate a case for an eclectic discipline.

I wanted to make a career out of spreading the message that prosthodontics is arguably the most complex, demanding, and ultimately, gratifying branch of dentistry. It reconciles concepts of bioengineering, logic, ethics and architectural form and function. The parts — management of teeth and supporting tissue integrity and considerations such as a patient's age, systemic health and socioeconomic status — are subjugated to the concept of intraoral and extraoral architecture. This is what makes the discipline so much more than mere optimal manipulation of materials and ingenious techniques. I always saw it as a field that has long outgrown the traditional conviction that science in clinical dentistry is merely the collection of reliable anecdotes. It was an opportune time to translate evidence-based clinical knowledge into targeted interventions.

JCDA: How did you first become interested in dental implants?

GZ: I will never forget the day when Henry Levant, one of the many outstanding graduate students who enriched my academic career, insisted that our research into cementing dental implants in experimental animal jaws was a far cry from what one Swedish orthopedic researcher was reporting on. Henry's observation led to my study of Per Ingvar Brånemark's work, subsequent visits to his laboratory at the

University of Göteborg in the mid-70s and the decision to seek research funds to duplicate the Brånemark claim to osseointegration.

JCDA: Would you consider osseointegration to be the biggest breakthrough in prosthodontics?

GZ: Definitely yes! The notion that interaction between a specific alloplastic material and selected host bone sites could induce interfacial osteogenesis was a dreamed-of breakthrough for prosthodontic patients that had major therapeutic benefits. Here was the incredible potential to cross a threshold and get away from the artificiality of removable prostheses and ecologically invasive fixed ones. This was biotechnology at its best and a catalyst for surgical and prosthodontic scholarship.

JCDA: How would you interpret your personal contribution to prosthodontics?

GZ: I was particularly fortunate in obtaining government, and subsequently, industry support to carry out clinical research into the efficacy and effectiveness of osseointegrated dental implants. In the early 80s, most clinical academics focused on teaching and patient responsibilities, so finding time for serious research was difficult. Consequently, graduate students frequently ended up demonstrating their creativity in laboratory-type research. This otherwise laudable model was unlikely to yield immediate practical and seminal results that could profoundly influence practice.

Our work aimed at doing just that; we avoided the commercial temptation to invent yet another type of implant, but instead sought to expand and diversify Brånemark's clinical applications and to reconcile our therapeutic prescriptions with considerations such as implant site specificity and patient age, gender and health status. We diligently collected the sort of clinical data that could be synthesized into educational packages for dental undergraduate and graduate students as well as general practitioners.

Together with Gerald Baker from Mount Sinai Hospital, I helped pioneer short courses and mini-residencies for continuing education programs. We introduced implant options for single-tooth replacements as well as for supporting overdentures in undergraduate courses, at least a decade before this approach was discovered by other schools or claimed as some sort of new standard of dental therapy.



Dr. Zarb (left) was presented with CDA's Honorary Membership Award in 2004 by Dr. Louis Dubé. Dr. Zarb received CDA's Distinguished Service Award in 1991.

Moreover, we were the first teaching institution in the world to instruct periodontists and other dental specialists in the surgical technique. Above all, our actions led to a convergence of evidence regarding treatment protocols and outcomes in the entire applied area of osseointegration. This multidisciplinary approach was possible thanks to collaborations with some delightful intellectual subversives in other areas (notably occlusion and temporomandibular joint disorders), such as Drs. Norman Mohl, John Rugh, Frank Dolwick, Christian Stohler, Barry Sessle and Bruce Ross.

JCDA: What do you believe are some of the most promising areas for research in prosthodontics?

GZ: Many outstanding researchers in the basic sciences have built on clinical research evidence and now hypothesize that implant surface treatment or surgical site development might lead to even better safety margins than the remarkably high ones we currently enjoy. Scientists like Jed Davies at the University of Toronto are carrying out exciting work on the nature of healing around implants, among other projects. I remain convinced that this direction will yield additional seminal developments in the field and will deepen even further the synergy between surgery and prosthodontics. I believe that success in this field cannot be purchased in a package. The current deluge of commercial publicity is more about product differentiation in a crowded market than about scientifically based outcome studies.

JCDA: How can we raise the prominence of Canadian dental scholarship on the global scene?

GZ: I have no doubt that we currently produce dentists and dental specialists who can match the skills and intellectual rigour of the very best graduates from other world-class institutions. However, our undergraduate programs are suffering because of the growing dearth of qualified clinical scholars, prompting a compromise in the staff recruitment process. A popular solution supports the idea that general dentists are the best teachers if we are to produce general practitioners. I strongly disagree with this ideology, although I recognize that it is far easier to recruit part-time clinical teaching staff than highly trained clinical specialists. Our profession must strive for educational excellence if we are to continue providing the very best educational experience for our colleagues-in-training. This training will, in turn, translate into the very best of patient care.

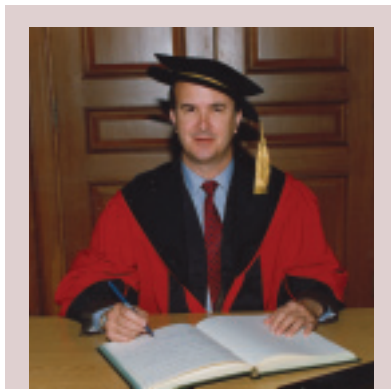
Resources appear to be increasingly limited (ask any dean) specifically for clinical education. We run the risk of continuing to win only bronze medals in clinical education if the meager funding currently provided by governments is not increased. Such research monies granted to the few exceptional basic sciences researchers do not have an immediate impact on clinical education. Only separate and targeted funding can help solve the lingering financial crisis.

Innovative programs like the qualifying programs have already helped several dental schools expand both their humanitarian and financial horizons. The time might be particularly right for mergers between dental schools, starting with national mergers of basic science and pre-clinical programs. The possibility of creating new qualifying programs at the specialty level should also be explored. This option could partially

address our staff recruitment needs, as well as enhance the Canadian dental scholarship profile.

JCDA: What are your goals as editor-in-chief of the *International Journal of Prosthodontists*?

GZ: Mine is a personal conceit that the written word in dentistry is more powerful than the drill or the articulator or even the titanium fixture. I therefore regard my new role as editor-in-chief as a final chapter in a mission to promote clinical prosthodontic scholarship that takes into account both patient- and dentist-mediated concerns. Consequently, papers on materials and techniques will not play a prominent role during my tenure as editor. I continue to regard the university-trained prosthodontist as the leader of the decision-making team, the best equipped clinical scholar to synthesize divergent treatment opinions into a cohesive argument for an informed treatment plan. It has been gratifying to have enjoyed the opportunity to work with so many colleagues and students who have enriched this conviction and permitted its development. I have enjoyed my career tremendously, but I am beginning to discover that there is potential for an equally fulfilling life after clinical academia and I intend to explore this promise with continuing enthusiasm. ♦



Dr. Zarb has received many national and international accolades over his 35-year career, including an Honorary Doctorate of Laws from Dalhousie University. He is seen here signing the Honorary Degree Register.