The First World Symposium
on Orthodontics

Wave of the Future

Sheraton San Diego
Hotel and Marina

San Diego, California
August 1–2, 2003

Program Chairs
T. M. Graber and Carla Evans

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FINAL PROGRAM
The morning session will be moderated by T. M. Graber.

7:45 AM – 8:00 AM

Introduction

T. M. Graber, DMD, MSD, PhD, Odont Dr hc, DSc, ScD, MD, FRCS

T. M. Graber is a well-respected and internationally known educator, speaker, and author in orthodontics. He served as professor and head of orthodontics at the Pritzker School of Medicine, University of Chicago, from 1969 to 1982, and in 1964 founded the Kenilworth Dental Research Foundation, where he has been director ever since. Dr Graber was editor-in-chief of the American Journal of Orthodontics & Dentofacial Orthopedics from 1985 to 2000 and presently is editor-in-chief of the World Journal of Orthodontics. He is also clinical professor of orthodontics at the University of Illinois at Chicago. A prolific author and speaker, Dr Graber has written 20 books, 20 book chapters, and more than 160 scientific articles in peer-reviewed journals, and has lectured extensively and taught more than 450 continuing education courses. Among the many awards he has received are the Albert H. Ketcham Award, the Jarabak International Teacher's Award, and four honorary doctorate degrees.
Applying Common-Sense Mechanics in Your Daily Practice

Thomas F. Mulligan, DDS, MSD

Mechanics has been considered by many to be either too academic for effective application in a daily practice or so advanced as to require an engineering background. This presentation is intended to show that neither is the case. The nature of forces and moments will be discussed in a manner that should stimulate a greater appreciation for applied mechanics. Clinical application will be demonstrated for all areas addressed. It will be seen that an understanding of mechanics is fundamental to clinical practice, as such knowledge will enable the orthodontist to identify the type of tooth movement taking place even before referring to a postcephalometric tracing. Anyone interested in cause-effect relationships will find that a proper understanding of mechanics offers the opportunity to apply desirable force systems, predict the resultant tooth movement, adapt treatment to individual patient needs, and enjoy an orthodontic practice more than ever before. If you are a typical orthodontist who wants to know “why things happen” and “how they happen,” you will not be disappointed.

Thomas F. Mulligan has had a full-time private practice in Phoenix, Arizona, for more than 40 years. He is a member of the American Dental Association, the American Association of Orthodontists, the Pacific Coast Society of Orthodontists, and the Arizona State Orthodontic Society. He is also a diplomate of the American Board of Orthodontics and past president of the Southwest Component of the Edward H. Angle Society of Orthodontists. Dr. Mulligan lectures throughout the world and has published several books and journal articles.
Biomechanics You Can Understand

Robert J. Isaacson, DDS, MSD, PhD

Biomechanics is a cornerstone of clinical orthodontics, and yet many orthodontists do not fully understand it. This presentation will define the characteristics of all appliance systems in language and examples you can understand, and it will show specific clinical examples of how to use biomechanics to optimize your treatment of patients. The goal of this presentation is to enable you to better evaluate new proposed materials and techniques.

Robert J. Isaacson is a diplomate of the American Board of Orthodontics and a past chairman of the Department of Growth and Development of Orthodontics at Virginia Commonwealth University. In the last 10 years, he has presented at 60 universities and orthodontic groups and published 85 articles and abstracts. He is editor of The Angle Orthodontist and has served as president of both the North Atlantic and the Northern California Components of the Edward H. Angle Society of Orthodontists. He is a coreipient of the 2002 Albert H. Ketcham Award from the American Board of Orthodontics.
The **Excellence in Orthodontics Award** will be presented to Jack G. Dale, DDS, immediately following the Friday morning session, in recognition of his outstanding accomplishments in orthodontics and his excellence as a teacher and clinician.

Jack G. Dale is chairman of the board of The Charles H. Tweed International Foundation for Orthodontic Research and Education. He served for more than 30 years as associate professor at the University of Toronto and has maintained a highly successful practice in Toronto for 42 years. He has lectured worldwide and has been involved with more than 75 publications addressing a wide range of topics, such as growth and development, patient motivation, self-esteem, and orthodontics education. Dr Dale has served as president of more than 15 professional organizations and is a recipient of the Albert H. Ketchum Award.

**Scientific Program**

The afternoon session will be moderated by Arthur A. Dugoni, DDS, MSD.

Arthur A. Dugoni has been dean of the University of the Pacific School of Dentistry since 1978 and has more than 40 years’ cumulative experience in general dentistry, pediatric dentistry, and orthodontics. Recipient of numerous distinguished service awards, Dr Dugoni is a member in the List of Honour of the World Dental Federation and has been identified as a distinguished leader by the Dental Manufacturers of America and the American Student Dental Association. He is listed in Who’s Who in America, Who’s Who in Medicine and Health Care, International Who’s Who, and the American Academy of Science. Dr Dugoni has presented more than 600 professional lectures and has published more than 100 articles.
New Horizons in Orthodontics and Dentofacial Orthopedics: The Twin Block Technique

William J. Clark, BDS, DDO

Twin blocks are the most widely used functional appliances throughout the world. They are comfortable, esthetic, and designed for full-time wear. The appliances are patient friendly, and they consistently correct malocclusion, with dramatic improvements in facial appearance. Topics covered in this presentation will include research in dentofacial orthopedics; introduction to twin blocks; case selection; appliance design and construction; bite registration; clinical management; treatment of Class II, Division I malocclusion; management of the vertical dimension; treatment of deep overbite and anterior open bite; treatment of Class II, Division 2 malocclusion; reverse twin blocks for treatment of Class III malocclusion; new guidelines for orthodontics, orthopedics, or surgery, extending the scope for orthopedic correction; integration with fixed appliances; a new protocol for combination fixed/functional therapy; and development of fixed twin blocks.

William J. Clark, creator and developer of the twin block technique, has a private practice in Fife, Scotland, and is author of Twin Block Functional Therapy—Applications in Dentofacial Orthopedics (Mosby, 1995). He has completed many worldwide lecture tours over the past 20 years, including the first live teleconference in orthodontics in 1991. Current interests include fixed-removable appliances, specifically a new series of preactivated trans force appliances for lingual arch development and fixed twin blocks. Dr Clark is the first recipient of an award of distinction from the British Orthodontic Society for an outstanding contribution to orthodontics.
Root Resorption: Prevention of the Scourge of Orthodontics

M. Ali Darendeliler, DDS, PhD

Root resorption during orthodontic treatment remains a controversial issue despite the considerable volume of literature on this topic. Mechanisms behind root resorption are difficult to understand. There are several environmental, genetic, and systemic factors that might influence the biologic and physiologic events leading to this phenomenon, and other variables such as age, sex, race, and bone density have been evaluated as high-risk factors that may increase susceptibility to root resorption. Biomechanical factors and clinical implications of root resorption have also been examined. This presentation will address every aspect of root resorption and show the outcomes of a series of studies undertaken in Sydney. Emphasis will be on physical properties, mineral content of root cementum, change in expression of key molecules in the control of root and bone remodeling during root resorption, and the effects of different levels of controlled orthodontic force applications on severity of root resorption.

M. Ali Darendeliler is professor and head of orthodontics at the University of Sydney, head of orthodontics at the United Dental Hospital in Sydney, and a research collaborator and visiting instructor of orthodontics at the University of Geneva. An internationally known author and lecturer, Dr. Darendeliler is a reviewer for several orthodontic journals and an editorial board member for Orthodontics and Craniofacial Research and Progress in Orthodontics. He is also a member of several professional organizations, including the Australian Society of Orthodontists, the Australian Dental Association, and the American Association of Orthodontists.
Biomechanics for the New Millennium: Super-efficient “Mechanotherapy”

Donald G. Woodside, DDS, MSc, PhD

This presentation will explore some recent developments that appear to have increasing importance in the future of orthodontic therapy: the progressive increase in the use of self-ligating brackets; the development of archwires capable of delivering minute forces for rapid and continuous tooth movement; the development of microimplants that can be placed by the orthodontist for anchorage augmentation; functional appliance use in young adults; an increased emphasis on the role of glenoid fossa remodeling in the correction of Class II skeletal dysplasia; the use of serial expansion to assist maxillary protraction in Class III cases; correction of Class II malocclusion without headgear, Class II elastics, or distalizing appliances; and the use of genetic assessments in orthodontic diagnosis.

Donald G. Woodside is professor of orthodontics at the University of Toronto, where he served as department head from 1962 to 1993. His published work spans both human and experimental mandibular growth, as well as the clinical use of functional appliances. A diplomate of the American Board of Orthodontics, he has received many international awards in orthodontics and has lectured extensively worldwide. In addition to his research and teaching, Dr Woodside maintains a private orthodontic practice in Toronto and is an editorial board member of the World Journal of Orthodontics.
Larry W. White has maintained a full-time private practice in orthodontics for more than 30 years and currently practices in DeSoto, Texas. A diplomate of the American Board of Orthodontics, he is a member of several professional organizations, including the American Dental Association, the Texas Dental Association, and the American Association of Orthodontists. With broad editorial experience, Dr White is an editorial board member for the World Journal of Orthodontics, a manuscript reviewer for the American Journal of Orthodontics & Dentofacial Orthopedics, and a contributing editor for the Orthodontic CyberJournal. He also served as editor of the Journal of Clinical Orthodontics for 17 years. Dr White has contributed more than 100 original articles to the dental literature and has presented lectures to orthodontic societies, universities, and study clubs in more than 35 countries.
Scientific Program  Saturday, August 2, 2003

Moderated by Larry W. White

8:00 AM – 9:30 AM

Finishing with the Preadjusted Orthodontic Appliance

Richard P. McLaughlin, DDS

The preadjusted orthodontic appliance allows a gradual progression toward finishing rather than an abrupt phase of tedious wire bending. Consequently, the fewer the errors made during treatment, the less work required during the finishing stage. Horizontal, vertical, and transverse factors as well as dynamic, cephalometric, and esthetic factors need to be considered when finishing. Horizontally, it is important to establish the correct tip of the anterior and posterior teeth. Adequate torque for the incisors must be introduced, and discrepancies in tooth size must be managed. Rotations must be controlled and all spaces should be closed, unless restorations are indicated. Vertically, crown lengths, marginal ridge relationships, and contact points must be adjusted. Final correction of the curve of Spee must be established. Transversely, arch form and archwire must be coordinated, and posterior torque must be corrected. From a dynamic perspective, the condyles should be in centric relation when the teeth occlude, and functional movements should be established. By this stage, all habits should be corrected. Finally, cephalometric and esthetic objectives should be reviewed.

Richard P. McLaughlin maintains a full-time practice in orthodontics in San Diego, California, and he is a clinical professor of orthodontics at the University of Southern California in Los Angeles. He has lectured extensively nationally and internationally, is a member of the Pacific Coast Society of Orthodontists, the American Association of Orthodontists, and the Edward H. Angle Society of Orthodontists, and is a diplomate of the American Board of Orthodontics.
Scientific Program
Saturday, August 2, 2003
Moderated by Larry W. White

10:00 AM – 11:30 AM

Precision Bracket Placement:
A Prescription for Precise Results

Anoop Sondhi, DDS, MS

Accurate bracket positioning is critical in the efficient application of biomechanics and in realizing the full potential of a preadjusted edgewise appliance. Once it is recognized, bracket placement can have a profound impact on the expressed first, second, and third order movements. Although brackets can be placed precisely with direct bonding, indirect bonding allows greater precision in orientation and placement of brackets. This presentation will begin by assessing the effect of accurate bracket placement on the final treatment result. This includes a discussion of anterior interferences and their impact on occlusal dysfunctions and temporomandibular disorders. Control of anterior interferences during fixed appliance mechanics will be analyzed in detail. Finally, the development of a pretorqued, preangulated prescription designed to achieve optimal esthetic and functional results will be discussed.

Anoop Sondhi maintains a full-time private practice in Indianapolis, Indiana, and is a visiting professor for several graduate programs in orthodontics. His special interests include use of contemporary orthodontic appliances, orthodontic management of temporomandibular disorders, and indirect bonding, as well as office organization and practice management. Dr Sondhi currently serves as a consultant to the American Journal of Orthodontics & Dentofacial Orthopedics and the Journal of Orofacial Pain. He is a member of the American Dental Association and the American Association of Orthodontists and has served these organizations at the state, regional, and national levels.
The afternoon session will be moderated by Carla A. Evans, DDS, DMSc.

Carla A. Evans has been at the University of Illinois at Chicago since 1994 and serves as professor and head of orthodontics in the College of Dentistry and professor of bioengineering in the College of Engineering. Her research interests include normal and abnormal facial growth and development, application of computer imaging to orthodontic diagnosis and treatment planning, and evaluation of treatment outcomes. She is a diplomate of the American Board of Orthodontics, associate editor of the World Journal of Orthodontics, counselor of the Chicago Section of the American Association for Dental Research, and vice president of the IADR/AADR Craniofacial Biology Group. In addition, she received an NIH Research Career Development Award and was director of the NIH-supported Training Grant in Craniofacial Anomalies at Harvard.
Routine Use of Dental Implants for Rigid Anchorage

W. Eugene Roberts, DDS, PhD

Osseointegrated implants are essential anchorage units for achieving optimal results in most partially edentulous patients. This is demonstrated through a prospective study of 62 patients with partially edentulous malocclusions who were treated with endosseous implant anchorage. All patients had acquired malocclusions that were associated with trauma, pathology, or a history of missing teeth due to congenital absence or extraction. The most common clinical objective was to move mandibular teeth mesially to close spaces, limit the need for prostheses, establish anchorage for maxillomandibular mechanics, define the anterior limit of the dentition, create a “platform” to guide the treatment of the maxillary arch, and provide adequate support for the lips. The guiding premise for achieving optimal esthetics and function in this ethnically diverse sample was lip competence with mandibular incisors over basilar bone.

W. Eugene Roberts has been chair of orthodontics at Indiana University in Indianapolis since 1988 and was appointed Jarabak chair in orthodontics in 2001. Dr Roberts is a diplomate of the American Board of Orthodontics and a member of the Edward H. Angle Society of Orthodontists. Throughout his career, he has maintained a part-time private practice with an emphasis on implant-anchored orthodontics for management of complex partially edentulous malocclusions.
Pushing the Biologic Envelope: Distraction Osteogenesis and Palatal Implants to Enhance Clinical Orthodontic Outcomes

Jason B. Cope, DDS, PhD

As technology improves, so does our ability to restore the masticatory system to near-optimal conditions. Distraction osteogenesis and palatal implant osseointegration, two recent advancements in bone biology, enhance treatment by allowing very controlled bone segment manipulation/generation and tooth movement without anchorage loss. Combined with today's advanced surgical and restorative procedures, these techniques place the interdisciplinary dental team in a unique position to restore mutilated denticions to ideal function and esthetics. This presentation will outline the basic biologic and biomechanical tenets governing the successful application of distraction osteogenesis. In addition, several clinical cases will be shown to illustrate case selection, treatment planning, and treatment monitoring during distraction osteogenesis and palatal implant use.

Jason B. Cope maintains a full-time private practice in Dallas, Texas, and is a clinical assistant professor in orthodontics at Baylor College of Dentistry in Dallas. During the past 5 years, his work has centered on distraction osteogenesis. He has written or cowritten 34 published articles and book chapters as well as 19 funded research grants, and has edited a CD-ROM and a textbook on this topic.Recipient of several awards for his research, Dr Cope has lectured nationally and internationally on distraction osteogenesis.