

Holding Hands to Improve Quality of Life

ANAPLASTOLOGY – MEDICINE – DENTISTRY

International Anaplastology Association
**29TH ANNUAL
EDUCATIONAL CONFERENCE**
Rio de Janeiro, Brazil





Welcome

Dear Colleagues,

It is a pleasure to welcome you to the 29th Annual International Anaplastology Association Educational Conference. We are delighted to host a conference in Brazil and South America for the first time. I believe that this year’s theme, “Holding Hands to Improve Quality of Life,” speaks to our diverse rolls in collaborative patient care teams and our mission for quality patient care. I congratulate Dr. Marcelo Ferraz de Oliveira on a terrific program. I thank him for his many hours dedicated to developing the educational conference. It is an honor to welcome and thank our keynote speakers, our invited speakers, and colleagues. We appreciate their time their time and expertise.

It was a privilege to serve as President of the IAA this year. I received tremendous support from the IAA Board of Directors and our Executive Director, Rachel Brooke. It was an honor to serve with this team of leaders. The Board’s dedication and support were invaluable, as we hosted our conference in South America for the first time. One of our goals this year was to strengthen membership value through online educational opportunities. I would particularly like to highlight the work of board member and Education Committee Chair, Colette Shrader. Her committee brought regular online educational opportunities to accomplish our goal. Already this year, we completed four online webinars, which are free to members. I congratulate the Education Committee on this great effort, and I look forward to seeing educational opportunities expand under this great team.

I greatly anticipate an inspiring program. With attendees from more than twenty countries, I am truly honored to be a part of such an international collaboration.

Thank you for joining us!

With great anticipation,

Amanda Y. Behr, MA, CCA, CMI, FAMI
IAA President

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Dear Colleagues,

I'd like to personally extend each of you a warm Brazilian welcome to Rio de Janeiro, Brazil to the International Anaplastology Association 29th Annual Educational Conference.

This meeting will be a great opportunity not only to expand our borders to other areas of the world, but also to exchange our experiences with the most renowned and talented speakers, some already known by you and some new ones.

Our "Anaplastology Family" has arms wide-open to receive new members and attendants from various specialties involved in the rehabilitation of people suffering from facial and somato disfigurement.

**HOLDING HANDS FOR A BETTER QUALITY OF LIFE
ANAPLASTOLOGY - MEDICINE - DENTISTRY**

We are honored with the high level of expertise that is slated to participate in this conference. I have to thank all of my colleagues from the planning committee who have put their time and energy into this memorable event. I also want to thank the speakers who believed in us and have made themselves available for this beautiful and unique event.

In addition, I hope you also enjoy the wonderful landscape of one of the most beautiful cities in the world, Rio de Janeiro.

With my very best regards,

A handwritten signature in black ink, appearing to read "Marcelo Ferraz de Oliveira". The signature is fluid and cursive, with a large loop at the end.

Marcelo Ferraz de Oliveira, DDS
Conference Chair/Vice-President

Sponsors

Gold Sponsors

Politec

Politec Health is a Brazilian company with over 40 years of experience in the healthcare market, importing and distributing concepts, quality products and services!

Technovent

Technovent Ltd provides the complete solution for all aspects of maxillofacial prosthetics. Our products include magnetic attachment systems, specially formulated silicone materials, colouring systems, skin adhesives and other patient care products.

Materialise

For over 25 years, Materialise has been at the forefront of major innovations in 3D surgical planning based on medical images. Its vast experience in 3D Printing technologies has made it possible for the company to provide patient-specific solutions like anatomical models, surgical instrumentation and implants. Materialise has software and service solutions for joint replacements, osteotomies, orthognathic surgery, cranio-maxillo facial reconstruction including anaplastology, and provides customized 3D printed implants.

Exhibitors

Finishing Touches

Finishing Touches are industry leaders in medical and cosmetic micropigmentation training and product supplies. Since our formation in 1996 we have strived to develop innovative and new ways to improve our teachings along with the visual appearance of all types of micopigmentation treatments. Medical tattooing can be a real solution for helping to restore the visual appearance of facial features and can also help to disguise skin crafts and conditions such as vitiligo. Our many years of experience have allowed us to develop training courses that cover all aspects of facial feature restoration for both medical and cosmetic purposes.

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International Anaplastology Association

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IAA Conference Program

August 26-29, 2015

Wednesday, August 26, 2015

PRE-CONFERENCE COURSE

Advanced Colouring Course – Hands On

Speakers: **Peter Evans, MIMPT** and **Mark Waters, PhD**

8:00 - 9:00	Colour Theory Lecture
9:00 – 9:45	Colour Theory Demonstration
9:45 – 10:00	Coffee Break
10:00 – 10:30	Spectromatch Reality Series Demonstration
10:30 – 12:00	Hands-on Session: Participants will work in pairs to colour silicone and pack ear mould using Reality Series.
12:00 -14:00	Lunch on your own
14:00 - 14:45	Spectromatch Eskin Lecture
14:45 – 15:15	Spectromatch Eskin Demonstration
15:15 – 15:30	Coffee Break
15:30 – 17:30	Hands-on Session: Participants will work in pairs to colour silicone and pack ear mould using Eskin System.
17:30 – 18:00	Question & Answer Session

Welcome Reception

Join us from 19:00 – 21:00 as we kick off the IAA's 29th Annual Educational Conference! All conference attendees are encouraged to join us for this event.

Continuing Education Credits

Sessions at this conference will earn Continuing Education Units with the BCCA. The BCCA requires that certificate holders acquire their own verification documentation that must include the conference or workshop agenda and one of the following: contact hours, certificate of attendance or a letter from the event sponsor of the course confirming both the dates and hours of attendance. CEU hours for this conference have been calculated by the IAA. The number of CEU credit hours is based upon instructional time, excluding welcomes, introductions, breaks, meals and other non-education events. Following the conference, the IAA will e-mail you a Certificate of Attendance.

Thursday, August 27, 2015**Scientific Session: Day 1**

8:00 – 8:05	Amanda Y. Behr, MA, CCA, CMI, FAMI	President's Address
8:05 – 8:15	Marcelo Ferraz de Oliveira, DDS	Welcome
	Session Moderator – Suzanne Verma, MAMS, CCA & Marcelo Ferraz de Oliveira, DDS	
8:15 – 8:45	Ricardo Lopes da Cruz	Keynote: Facial Reconstruction – The Identity
8:45 – 9:15	Anders Tjellström, MD, PhD, D.Sc. hc	Keynote: Implant Retained Craniofacial Prostheses: How It All Started
9:15 – 9:45	José Carlos Marques de Faria	Free Flaps for Head and Neck Reconstruction: Personal Experience of 1500 Cases
9:45 – 10:00	Julie Jordan Brown, MAMS, CCA	A Case Study— The Challenges of Switching Between Microtia Treatment Options
10:00 – 10:15	Anne-Marie Riedinger, CCA	Nasal Prostheses
10:15 – 10:35	Coffee Break	
10:35 – 10:50	Kerstin Bergström, CDT, MDhc	Complex midface prostheses
10:50 – 11:35	Hubert Vermeersch, MD, PhD, Ir. Maarten Zandbergen & Jan De Cubber, CDT	Keynote: Trilogy Presentation: Synergy between surgeon, anaplastologist and clinical engineer
11:35 – 11:50	Roberto Fanganiello, B.Sc, PhD	Increased Osteopotential in SHED Associated with Higher IGF2 Expression when Compared with hASCs
11:50 – 12:20	Marcelo Ferraz de Oliveira, DDS and all presenters from morning session	Panel Discussion
12:30 – 14:30	Lunch	
13:30 – 14:30	IAA Board Meeting	
	Session Moderator – Paula Sauerborn, MA, CCA	
14:30 – 14:45	Suzanne Verma, MAMS, CCA	Preoperative Planning and Surgical Placement of Craniofacial Implants using Navigational Systems
14:45 – 15:15	Marcos Curi	Retrospective Study of Pterygoid Implants in the Atrophic Posterior Maxilla: Implant and Prosthesis Survival Rates Up to Three Years
15:15 – 15:30	Joacim Stalfors, MD, PhD	Factors of Importance for Implant Survival and Less Skin Inflammation
15:30 – 15:45	Luciano Dib	Extraoral Implants for Orbit Rehabilitation: A Comparison between One-stage and Two-stage Surgeries
15:45 – 16:00	Peter Llewelyn Evans, MIMPT	Integrating Digital Technology into Facial Prosthetics
16:00 – 16:20	Coffee Break	
16:20 – 16:35	Yvonne Motzkus	Prosthetic Provision for Patients with Atypical Defects
16:35 – 17:00	Rosemary Seelaus, MAMS, CCA	Will we ever see the end of face prosthetics in our lifetime? Will there be a better solution for our patients?
17:00 – 17:30	Barbro Bränemark, Anders Tjellström, MD, PhD, D.Sc.hc & Marcelo Ferraz de Oliveira, DDS	Tribute to P-I Bränemark
17:00 – 18:00	Multiple Presenters Poster Presentations	

Friday, August 28, 2015**Scientific Session: Day 2**

8:30 – 9:00	IAA Member Business Meeting	
9:00 – 9:15	Announcements	
	Session Moderator – Juan Garcia, MA, CCA	
9:15 – 9:30	Marcelo Ferraz de Oliveira, DDS	Collaboration between Medicine Dentistry and Anaplastology
9:30 – 9:45	Paul Tanner, CCA	Prosthetics for Microtia
9:45 – 10:00	Paula Sauerborn, MA, CCA, Kerstin Bergström, CDT, MDhc, Marcelo Ferraz de Oliveira, DDS	Hand and Finger Prostheses – Suction and Implant Retained
10:00 – 10:25	Jan de Cubber, CDT	The Upper Arm Fairing Prosthesis, “The Other Prosthesis” - The Link between Anaplastology and Orthopedics
10:25 – 10:40	Jiri Rosicky, ME, Ph.D., CPO	Limb Prostheses in Anaplastology
10:40 – 11:00	Coffee Break	
11:00 – 11:30	Annie Laverdière	Hybrid Custom Made Breast Prosthesis Method, Virtual Phase
11:30 – 12:00	Rosemary Seelaus, MAMS, CCA	Efficiency with Technology Talk
12:00 – 14:00	Lunch	
	Session Moderator – Yvonne Motzkus	
14:00 – 14:30	Hugo Nary Filho, DDS	15 Years Experience in Zygoma Implants: Critical Analysis Fore Use in Implant-Supported Prostheses
14:30 – 14:45	Amanda Y. Behr, MA, CCA, CMI, FAMI	Practical Application of 3D Technology for a Nasal Prosthesis
14:45 – 15:00	Juan Garcia, MA, CCA	Anatomy of the Eye as Applied to Ocular Prosthetics
15:00 – 15:15	Dawn Forshaw	Medical Tattooing
15:15 – 15:35	Coffee Break	
15:35 – 15:50	Rodrigo Salazar Gamarra	Obtaining 3D Models for Maxillofacial Rehabilitation from a Mobile Device: Photogrammetry
15:50 – 16:10	Paul Tanner, CCA	Mistakes and Remakes
16:10 – 16:30	Jorge Huamani	Tissue Engineering: The Use of a Combination of Cells, Engineering and Materials Methods, and Suitable Biochemical and Physicochemical Factors to Improve or Replace Biological Functions
16:30 – 16:45	Artavazd Kharazian	Penile Prostheses
16:30 – 17:00	Paula Rojas	A Temporary Nasal Prosthesis for a Patient with Recurrent SCC
	Closing Remarks	
19:30 – 22:30	Awards Banquet at the Royal Tulip Hotel	

Saturday, August 29, 2015

POST-CONFERENCE COURSE

Osseointegrated Implants in Craniofacial and Hearing Rehabilitation

Speakers: Kerstin Bergström, Dr. Arthur Castilho and Dr. Anders Tjellström

9:00 – 9:15	Introduction
9:15 – 9:50	Historical Background
9:50 – 10:00	Discussion
10:00 – 10:10	News from Our Sponsors
10:10 – 10:45	Hearing Through Bone Conduction
10:45 – 10:55	Discussion
10:55 – 11:10	Coffee Break
11:10 – 11:45	Facial Prostheses
11:45 – 12:00	Discussion
12:00 – 13:30	Lunch on your own
13:30 – 14:00	Surgical Technique for Facial Prostheses
14:00 – 14:30	Points and Pitfalls in Anaplastology
14:30 – 15:00	Surgical Technique for BAHA
15:00 – 15:10	News from Our Sponsors
15:10 – 15:30	Implants in Children
15:30 – 17:00	Hands-on Training
17:00	Closing Remarks

Saturday, August 29, 2015 *continued...*

MORNING SESSION

Craniofacial Reconstruction through Plastic Surgery

Morning Speakers: Dr. Ricardo Lopes da Cruz, Dr. Dov Goldenberg, Dr. Terence Farias, Dr. Tomaz Nassif and Dr. Marcelo Ferraz de Oliveira

AFTERNOON SESSION

Complex Facial Reconstruction by Vascularized Composite Allo-transplantation: Synergy Between Surgeon, Anaplastologist and Clinical Engineer

Afternoon Speakers: Hubert Vermeersch, MD, PhD, Ir. Maarten Zandbergen & Jan De Cubber, CDT

8:30 – 8:40	Welcome
8:40 – 9:10	Reconstructing the Face; the Identity
9:10 – 9:40	Oncologic Reconstructive Surgery of the Face
9:40 – 10:10	Prototyping in Facial Reconstruction
10:10 – 10:40	Coffee Break
10:40 – 11:00	Microsurgery on the Face
11:00 – 11:30	History of Facial Transplant
11:30 – 12:00	Facial Prosthesis – An Alternative to Major Surgery
12:00	Questions and General Discussion
12:00 – 14:00	Lunch on your own
14:00 – 17:00	Complex Facial Reconstruction by Vascularized Composite Allo-transplantation

WORKSHOPS

8:00 – 9:00	Robert Robinson, BS, MSA, CCA and Kuldeep Raizada, PhD, B.C.O.	Ocular Fitting
9:00 – 10:00	Jan de Cubber, CDT	Demonstration on Finger Epitheses
10:00 – 12:00	Ales Grygar, MgA	Application of ZBrush for Anaplastology
12:00 – 13:00	Margarita Rosa Caicedo	Clinical Evaluation of Patients with Anophthalmia
13:00 – 15:00	Mark Waters, PhD	Silicone & Magnetic Retention
15:00 – 17:00	Dawn Forshaw	Putting Colour Back Into People's Lives

CONFERENCE PROGRAM: PRE-CONFERENCE COURSE

Wednesday, 8:00 – 18:00

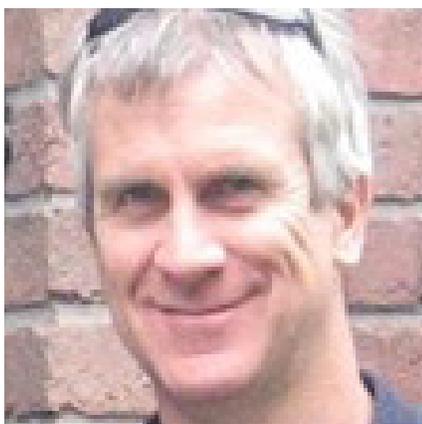


Advanced Colouring Course – Hands On

Presenters

Peter Evans, MIMPT and **Mark Waters, PhD**

An intensive, full, hands-on, one-day course using recent advances in colouring technology to produce facial prostheses. During the day participants will produce and auricular prostheses using advanced colouring techniques.



About the Presenters

Peter Evans is well renowned in the field of Maxillofacial Prosthetics, being part of a team that pioneered the use of Craniofacial Implants in the UK for retention of facial prostheses at St. Lawrence Hospital, Chepstow. Studying Maxillofacial Prosthetics in London in 1987, he moved to South Wales to join the Welsh Craniofacial Implant Team in 1989. He is presently Head of Prosthetic Maxillofacial Rehabilitation at Morriston Hospital, Swansea.

His main areas of interest include facial prosthetics for children, craniofacial implantology and 3D modeling and imaging. He has published extensively on the integration of digital technologies into facial prosthetics and implants, lecturing in the UK and worldwide.

Peter is a full member of the Institute of Maxillofacial Prosthetics (IMPT), founder member of the British Facial and Audiological Implant Group (BFAIG) and a founder member and secretary of the Centre for Applied Technology in Surgery (CARTIS).

Professor Mark Waters has over 20 years of research experience in the area of biomaterials, and particularly in the development of novel silicone rubber materials. He is currently a Professor in Biomaterials at Cardiff University as well as Director of Technovent Ltd. He has published over 50 papers in national and international peer reviewed journals in the area of polymeric biomaterial development. Professor Waters has been responsible for the development of numerous materials for use in maxillofacial prosthetics and dentistry, in addition to industrial materials. Technovent manufacturers and markets worldwide the Magna-Cap magnetic retention system for use with dental and craniofacial prostheses. The technology and functionality of Technovent products has been established over many years of research, development and clinical use. Since becoming director of Technovent, Professor Waters has enhanced their product line and has been instrumental in developing new innovations in magnetic retention for facial and dental prostheses.

CONFERENCE PROGRAM: GENERAL SESSION

Thursday, 8:15 – 8:45

Facial Reconstruction – The Identity

Keynote Speaker

Ricardo Lopes da Cruz, MD, TCBC

About the Presenter

Dr. Ricardo Lopes da Cruz completed his degree in Medicine at the Federal University of Rio de Janeiro in 1977. Dr. Cruz then did his Residency in General Surgery at the Hospital of Federal Ipanema; in Head and Neck Surgery at the National Cancer Institute (RJ); and completed his training in surgery Cranio-Maxillofacial for three years in the Department of Plastic Surgery at the Medical School of Graduate Studies at PUC-RJ under the coordination of Prof. Ivo Pitanguy. He created and headed the Surgery Department of Maxillofacial Federal Hospital de Ipanema for twenty years (1983-2003). He is co-author of Skull Surgery and Maxillofacial: The Osteotomies Aesthetic Face (published in 1987 by Medsi publisher) together with Jorge Psillakis, Silvio Zanini, José Melega and Edgard Costa.



Implant Retained Craniofacial Prostheses: How It All Started

Keynote Speaker

Anders Tjellström, MD, PhD, D.Sc.hc

Professor Per-Ingvar Brånemark in Göteborg Sweden introduced the concept of osseointegration. Brånemark studied the blood flow in vivo using the titanium encapsulated optical device. When the experiment was finished, he had problems removing the device as the surface of the titanium had integrated with the bone tissue. This observation irrelevant to his study, called serendipity, became the starting point for the clinical applications of osseointegration first used in the edentulous jaw. He tried to find an acoustic way to evaluate the stability of his implants. During these trials, he saw the possibility to use implants for hearing through direct bone conduction another sign of his special capacity of serendipity. From this, the step to implant retained external ear prostheses was not long and later patients with more advanced facial defects were treated. This unique development that has changed the life for millions of patients all over the world will be discussed and illustrated.

About the Presenter

Anders Tjellström is an ENT with the Department of Otolaryngology at the Sahlgrenska University Hospital. Tjellström's doctoral work at the University of Gothenburg brought him into contact with Professor Per-Ingvar Brånemark, a pioneer in the field of osseointegration, in 1972. In that same year, Tjellström and Brånemark collaborated to treat the first patient with a Baha System. Ever since his first patient, Tjellström has worked tirelessly to restore hearing to thousands of people around the world.



A Case Study – The Challenges of Switching Between Microtia Treatment Options

Presenter

Julie Jordan Brown, MAMS, CCA

This case study details the journey of a child born with microtia. At age 5, her parents chose to have her underdeveloped ear removed and craniofacial implants placed for an auricular prosthesis. At age 9, her parents made the decision to switch treatment options. She had her abutments removed and a MedPor® framework placed. After several more surgical procedures to refine the ear, the child is extremely disappointed with the lack of symmetry and disappointing aesthetics of her MedPor® ear. At age 17, the patient decides to have the MedPor® framework removed and reactivate the craniofacial implants for attachment of an auricular prosthesis. This presentation describes the challenges of this chronology of treatment options and the team approach to a successful outcome.

About the Presenter

Julie Jordan Brown has built a successful private practice over the past 27 years with the mission of providing high quality anaplastology services to patients throughout the state of Wisconsin. Success is measured by the high percentage of patients who return for replacement prostheses on a regular basis. As a certified clinical anaplastologist Julie regularly partners with surgeons, therapists, ophthalmologists, dental specialists and limb prosthetists to provide the best possible prosthetic restoration with careful attention to every detail for every patient. Julie earned her masters degree in Biomedical Visualization from University of Illinois at Chicago—helping to pioneer the master's specialty track in anaplastology. Julie believes that the benefits of professional collaboration in this small field are key to improvements in patient care.



Nasal Prostheses

Presenter

Anne-Marie Riedinger, CCA

“Visible like the nose in the middle of the face” (French expression), though losing the central part of your face means also losing self-image and identity. Therefore, nasal and mid-facial prostheses become an important reconstruction procedure after dramatic disfiguration due to tumor or trauma. The rehabilitation in order to achieve a realistic nasal prosthesis starts with the multidisciplinary approach, regarding patient’s expectations and selection of the appropriate retention system. Surgical collaboration is critical for bone-anchored prostheses, selection of fixture sites and orientation, dealing with compromises of the defect. Also, technical, artistic and functional issues will be discussed.

I realized over the years that each case is a new challenge. What worked well for one patient is not always appropriate for another one. I never gave up trying to invent new and improved solutions; while sometimes I had difficulties, there was eventual success after several trials. Anaplastology is the field of designing creative ways to solve problems and never give up in order to bring the dignity back to our patients.

About the Presenter

Anne-Marie Riedinger, CCA, former President of the IAA (2009-2011), has been an IAA member since 1988 and Program Chair of the 24th IAA Congress in Paris, France, in 2009. She graduated in Medical Art from the Ecole Supérieure des Arts Décoratifs de Strasbourg, France, where she eventually became a teacher (1996-2000). She specialized in facial prosthetics at the University of Illinois, Chicago, USA. A pioneer in France for facial bone anchored prostheses since 1986, she is the owner of the Centre d’Épithèses Faciales in Strasbourg and Paris, France. She is an international consultant for bone anchored surgery, and has given lectures, workshops and has written a number of articles in the field, for national and international journals.



Complex Midface Prosthesis

Presenter

Kerstin Bergström, CDT, MDhc

Cases that involve the mid-face region present the greatest challenge for the rehabilitation team. Teamwork and treatment planning are important for the final functional and aesthetic outcome of the restoration.

Rehabilitation of patients with large resection of the face, sometimes combined extra oral and intra oral defects, is more difficult and requires even more from the professional treatment team. The use of extra oral skin penetrating implants is regarded as a safe and predictable procedure for anchoring facial prostheses.

Besides the facial disfigurement, damage to this part of the face often means that the ability to talk and eat is impaired. Patients with extensive loss of palatal, oral, nasal and orbital structures often feel depressed and frustrated by their inability to speak properly. More devastating is the way they are often regarded by others. The anaplastologist and also the surgeon must be able to visualize what the final result will be before implant placement operation, as well as when choosing and designing

retention method to achieve secure fixation of the prosthesis. Because the face moves in many directions, the prosthesis must be sufficiently large and flexible enough to cover the defect so there will be no gaps.

Patients with extensive resections of the face will be presented following the steps during fabrication of prostheses and long time of follow of function after facial rehabilitation. During 36 years, the technique has developed and new possibilities for reconstruction has opened. Future developments to further improve the rehabilitation and quality of life for our patients is what we are striving for.

About the Presenter

Kerstin Bergström has introduced and developed the technique of Osseointegrated Retained Facial Prostheses since 1981 together with the Team of Professor Per-Ingvar Brånemark and Dr. Anders Tjellstrom at the Department of Otolaryngology at Sahlgrenska University Hospital in Gothenburg, Sweden where titanium

implants for extra oral use were introduced in 1977.

For almost 35 years, she has made Osseointegrated facial prostheses and followed patients from childhood to adolescence.

She has published over 25 scientific papers and book chapters and has conducted numerous International Workshops as well lectured worldwide at International Congresses on Osseointegrated Facial Prostheses. Invitations for treating patients with OI Facial Prostheses to 28 Clinics worldwide between 1985 and 2015.

Kerstin Bergström has received many national and international awards. Awarded Honorary Doctor of Medicine at the University of Gothenburg, 1996. Honorary Member of the British Facial and Audiological Implant Group. Honorary Member of the Biomaterial Research Center(BRC) at Sahlgrenska Academy, Gothenburg. President of the Scandinavian Association of Maxillofacial Rehabilitation (SKAR) since 2011.



Complex Facial Reconstruction by Vascularized Composite Allo-transplantation: Synergy Between Surgeon, Anaplastologist and Clinical Engineer

Keynote Speaker

Hubert Vermeersch, MD, PhD, Ir. Maarten Zandbergen & Jan De Cubber, CDT

A facial composite tissue allotransplantation (CTA) also known as a face transplant is one of the most complex operations performed within the field of reconstructive surgery.

This presentation covers the composite tissue allotransplantation performed at the Ghent University Hospitals, approached from 3 different angles, creating a unique and comprehensive overview of this highly complex surgery: the story of the surgeon, the anaplastologist and the clinical engineer.

The surgeon

Ghent University Hospitals had been preparing the creation of a Centre for CTA (composite tissue allograft) since mid 2009. At the end of 2010 a major facial trauma was admitted in our hospital. It was obvious from the start that classic flap reconstructive procedures would not be sufficient. However, after temporary reconstruction with a three-dimensionally tapered anterolateral free thigh flap (ALT) it became clear that patient and family wanted further reconstruction. Facial transplantation was proposed and accepted (an informed consent signed

post Ethical Committee and Hospital Management agreement was obtained). Several team meetings and surgical cadaver dissection exercises during the main portion of 2011 were held and resulted in scripts for the surgical procedure in donor and acceptor with photographic and textual descriptions of every step in the surgical procedures. Jan De Cubber (Anaplastology) and Materialise (3D virtual planning - preparation of models and surgical templates) were invited to participate from the start of these planning sessions. By the end of 2011, when the donor was available, we were fully prepared and the surgical procedure, in two neighbouring rooms in our operating wards, went flawlessly. More than 2 years post procedure, the patient is doing well and is in the process of functional rehabilitation under the guidance of prof. K. Van Lierde, member of the team and head of the University Speech and Language Department.

During this presentation, we will give the audience an overview of these steps, keeping in mind not to disclose any personal patient items.

The anaplastologist

On December 31st, 2011, the effectuation of the first facial Composite Tissue Allotransplant at the University of Ghent, Belgium took place. The intervention although found his nascence about three years before. The start of a multi-disciplinary quest looking for answers on questions that had never been asked before. This presentation is one part of a trilogy that highlights the intense collaboration of the surgical team, the anaplastologist and the clinical engineer guided by cutting edge 3-d technology.

Continued on next page

Prof. H. Vermeersch insisted the presence of an anaplastologist in the medical core team. Although the initial intended contribution was limited to the development of a production protocol for the donor's death mask, the anaplastologist's extensive experience with 3D virtual surgical planning and 3D printing of anatomical models contributed to a successful outcome.

As an extensive amount of bone was harvested from the donor, a supporting structure replacing this missing hard tissue was required to support the donor mask. A 3D printed model, produced to match the planned bone graft, proved to be an excellent scaffold for the final donor mask.

After the facial transplantation was completed, an implant retained orbital epithesis was manufactured. The orbital implants were pre-operatively planned virtually in 3D to obtain a more predictable outcome that combines optimal bone quality to ensure implant stability and implant locations to ensure ideal anchors for the epithesis.

In conclusion we learned that applying pre-operative virtual surgical planning in 3D in combination with 3D printed anatomical models and surgical guides resulted in a predictable and high quality outcome and most important, a satisfied patient.

The clinical engineer

A clinical engineer enables the surgeon and anaplastologist to apply the principles of pre-operative 3D virtual surgical planning and utilized 3D printed surgical guides and anatomical models for a specific patient. For this highly complex CTA, principles and tools that are used routinely in reconstructive and orthognathic surgery, were adapted to support this unique surgery.

To obtain a 3D virtual model of the patient's hard and soft tissues, a CT scan of the patient was imported in the DePuySynthes ProPlan CMF software. This served as a basis visualize the extent of the deformity and start the 3D virtual surgical plan. In close collaboration with the surgical team the Materialise clinical engineer provided a preliminary surgical plan that was finalized during multiple interactive planning sessions.

With an overlaying technique, the ideal size and shape of the hard tissue graft were determined and 3D printed to provide a tactile reference for the surgical team that was extensively used during cadaver trials. In addition to the graft model, an anatomical model of the patient's anatomy prior to transplantation and surgical cutting guides were provided which proved to be ideal communication tools for the donor and recipient surgical teams.

After completion of the surgery, a post-operative CT scan

was used to compare the pre-operative surgical plan with the post-operative outcome.

About the Presenters

Dr. Hubert Vermeersch is currently Head of the Department for Head and Neck Surgery of the Gent University Hospitals and Academic Departmental Head of the Nose, Ear, Throat and Logopaedics and Audiology Department of the Ghent University. He is also heavily involved in academic training of Plastic and Reconstructive Surgeons in Southern Countries by his project 'The Creation of a Reference Centre for Craniofacial anomalies and for the treatment of Benign Mandibular Tumours' in Kampala, Uganda.

He finished his medical studies in 1975, got his board certification for ENT in 1980, finished a two year fellowship for ear surgery with Prof Paparella at the University of Minneapolis, Minnesota in 1982 and worked as an associate professor at the Ghent University ENT department till 1988. Between 1989 and 1995 he trained to become a board certified Plastic Surgeon after which he started the Head and Neck Surgery Department at the Ghent University Hospitals until today. He is the author of 89 international peer-reviewed publications. His current surgical work is mainly in the field of facial reconstructive surgery using conventional techniques and CTA (composite tissue allograft).

Jan De Cubber was trained as a CDT and Maxilla Facial Prosthesis at the University of Brussels and got grandfathered as Certified Clinical Anaplastologist by the BCCA in 2008. Soon he became interested in orthopedic sciences. As a researcher at CTO (Belgium) and Otto Bock Industries (Germany, Vienna), he became an expert in medical applications of silicone polymeric chemistry. As founder and driving force behind Silicon House International, he created a special department for "facial epithetics" in 1990.

Over the last 15 years, the Center for Craniofacial Epithetics (CCE) opened its doors in Brussels (B), Gent (B), and Maastricht (NL). Each year, more than 190 facial implant retained epitheses are placed using the latest 3-d technology. In 2011, he made part of the core team responsible for the first CTA (composite tissue allograft), facial transplant in Belgium. He has been the President of the International Anaplastology Association in 2012 and he is a consultant at both the department of "head, neck and facial surgery" at the University of Maastricht and at the department of "Head and Neck Surgery" of the University of Ghent. Recently CCE became a member of the V!GO – Group of Companies.

Ir. Maarten Zandbergen Contact Maarten Zandbergen at Maarten.Zandbergen@materialise.com



Increased Osteopotential in SHED Associated with Higher IGF2 Expression when Compared with hASCs

Presenter

Roberto Fanganiello, B.Sc, PhD

To deliver stem / progenitor cells to guide skeletal tissue formation, biomaterials can be combined with stem cells before the moment of the surgery, in cell-based therapies. Stem cells from human exfoliated deciduous teeth (SHED) are an interesting type of mesenchymal stem cells (MSCs) used in bone bioengineering studies due to their multidifferentiation potential, noninvasive and efficient process of isolation, immunomodulatory activity and similarity to osteoprogenitor cells. Human adipose tissue-derived stem cells (hASCs) are another type of MSCs with osteoprogenitor properties easily harvested from the stromal-vascular fraction (SVF) of

the adipose tissue by simple surgical procedure and in abundant quantities. Its osteoprogenitor potential was demonstrated by using different culture conditions containing or not osteogenic growth factors. In this study we show that MSCs from human deciduous teeth (SHED) have an intrinsically higher osteogenic potential when compared with MSCs from human adipose tissue (hASCs) under the same controlled induction system using different methodologies. This study unravels osteogenic properties in SHED, implying IGF2 as a potential biomarker of MSCs with higher osteopotential and unveils IGF2 loss-of-imprinting in SHED.

CONFERENCE PROGRAM: GENERAL SESSION

Thursday, 14:30 – 14:45



Preoperative Planning and Surgical Placement of Craniofacial Implants using Navigational Systems

APresenter
Suzanne Verma, MAMS, CCA

Purpose: Surgical Navigation systems provide the benefits of virtual preoperative planning, elimination of the physical surgical guide, and real time intraoperative visualization that is driven by the proposed prosthetic outcome. This technology was utilized preoperatively for implant and prosthetic planning and intraoperatively to place craniofacial bone anchored implants for patients receiving an implant retained facial prosthesis.

Methods and Materials: Using a navigational planning system, (Stryker Intellect Cranial, Stryker Navigation) virtual visualizations of soft tissue and bone were created by segmenting DICOM images acquired from spiral CT data. When treating patients with unilateral facial defects, radiographic data from the unaffected soft tissue was mirrored onto the skull of the defect side to visualize the future prosthesis. Preoperative planning for patients with bilateral defects or disfigured opposing anatomy entailed pairing the patient's DICOM data with imported "digital donor anatomy

“ from either a different patient's CT, or an .stl file from a surface scan. Using navigational software, implant locations were planned in the anatomical area that would lead to the best aesthetic prosthetic result, as well as the appropriate bone height for implant stability. The surgical sites were located intra-operatively using integrated navigational instrumentation.

Results: For implant retained facial prosthetic cases, the implant locations were determined solely by virtual planning using navigational technology. This eliminated the need for preoperative measurements, impressions, and fabrication of a CT template and surgical guide. The use of virtual planning versus traditional surgical guides saved the anaplastologist an average of 10 hours of preoperative clinical and laboratory time and eliminated two clinical visits with the patient. The intraoperative virtual representation of the mirrored anatomy gave the surgical team the ability to make any necessary surgical decisions based on the future prosthetic outcome.

Continued on next page

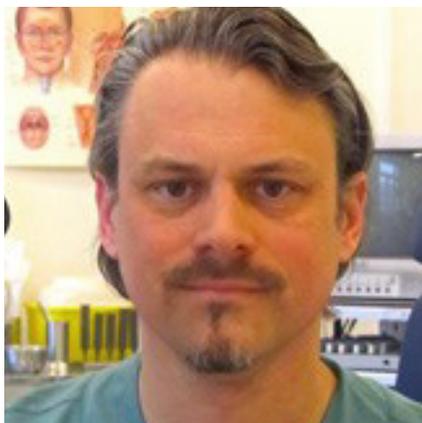
Preoperative planning using the navigational system improved the accuracy of implant placement by the surgeon, thus leading to more predictable prosthetic result.

Conclusions: The utilization of navigational systems in prosthetic reconstruction enhanced clinical efficiency, eliminated the need for a traditional or prototyped surgical guide, enabled prosthetic driven intraoperative repositioning, and aided in the future design of anatomical forms. With further development and the ability to export to open architecture platforms, this system could enable the team to take specific craniofacial intraoperative plans and create physical prototypes or custom anatomical implants.

About the Presenters

Ms. Suzanne Verma is Assistant Professor with the Oral & Maxillofacial Surgery Department and Certified Clinical Anaplastologist with the Center for Maxillofacial Prosthodontics at Texas A&M University Baylor College of Dentistry in Dallas, Texas. Her teaching responsibilities include directing a course in maxillofacial prosthetics for the graduate Prosthodontics department, and lecturing to post doctorate oral surgery residents and dental students. Suzanne received her Bachelors' in Biological Pre-Medical Illustration from Iowa State University, and a Masters in Biomedical Visualization, with an emphasis in Facial Prosthetics from the University of Illinois at Chicago (UIC). Her clinical training experiences include UIC's Craniofacial Center, The Maxillofacial Prosthetics and Dental Oncology Department at the University of Nebraska Medical Center, and The Maxillofacial Unit Laboratory of Morrilton Hospital in Swansea, Wales, UK, where she worked as a visiting Anaplastologist. Before arriving in Dallas, Suzanne worked as an Anaplastologist in both research and clinical capacities with COMPRU, (now IRSM) in Edmonton, Alberta Canada. Her research interests on which she has lectured nationally and internationally include; Applications of navigational surgery in extra oral implant placement, Incorporations of advanced technology in craniofacial reconstruction, and Pre-surgical planning in autologous auricular reconstruction. Suzanne is an active member of numerous field oriented associations, past Vice President of the Board for Certification in Clinical Anaplastology, current Director on the Board for the World Coalition of Anaplastology, and serves as Vice President Elect for the International Anaplastology Association.

CONFERENCE PROGRAM: GENERAL SESSION

Thursday, 15:15 – 15:30

Factors of Importance for Implant Survival and Less Skin Inflammation

Presenter
Joacim Stalfors, MD, PhD

This lecture will review the clinical experience and scientific evidence for maintaining implant survival and skin without inflammation around the abutments.

Patient associated factors of importance for the clinical outcome will be discussed, as well as how to improve some pre-conditions. Accurate surgical technique is important for establishing osseointegration and the important steps will be reviewed. Also, the effect on osseointegration by means of the implant design, as well as positioning and loading of implants will be discussed.

Soft tissue reaction at the point of percutaneous implant penetration remains an important clinical issue because it causes discomfort and may inhibit using the prosthesis. Scientific evidence for the different hypothesis explaining the aetiology of skin reactions will be covered as well as practical clinical methods for preventing and treating inflammation.

The perspective of the lecture is to convey a patient-centered view. Also, the professional teamwork approach is stressed, with special focus on the co-operation between the anaplastologist and the surgeon for a better outcome.

About the Presenter

Dr. Joacim Stalfors works as a consultant in Otorhinolaryngology, Head and Neck Surgery, at the Department of Otolaryngology, Sahlgrenska University Hospital, Sweden. The clinical work consists mainly of middle-ear surgery, surgery with the bone-anchored hearing aid (Baha) and titanium implants for craniofacial prosthesis (Vistafix). Dr. Stalfors' tutor in surgery have been Professor Anders Tjellström. Dr. Stalfors has published some 30 peer-reviewed articles, including articles on implant survival and skin inflammation when utilizing skin-penetrating titanium implants.



Extraoral Implants for Orbit Rehabilitation: A Comparison between One-stage and Two-stage Surgeries

Presenter

Luciano Dib

The aim of the study was to compare the success rates of osseointegration and the time for delivery of prostheses among cases treated by Two-Stage (TS) and One-Stage (OS) techniques for orbit rehabilitation from 2003 to 2011.

Forty-five patients were included, 31 males and 14 females. Group TS had 22 patients and Group OS had 23 patients. In total, 138 implants were fixated, 42 (30.4%) on previously irradiated bone.

The implant survival rate was 96.4% with a success rate of 99.0% among the non-irradiated patients and 90.5% among the irradiated patients.

Group TS received 74 implants with a survival rate of 94.6% (four implants lost). Group OS received 64 implants with a survival rate of 98.4% (1 implant lost).

Regarding the interval between implant fixation and the delivery of the prostheses, the median time for group TS was 9.6 months and for group OS was 4 months ($p < 0,001$).

The OS technique proved to be a reliable technique that was associated with few risks and complications, whereas the rates of osseointegration success were similar to those reported in the literature. The OS technique should be considered a viable procedure that shortens the time to final rehabilitation and facilitates the appropriate patient follow-up treatment.

About the Presenter

Luciano Lauria Dib graduated in 1984 from the University of São Paulo - USP (Ribeirão Preto). He did Residency in Oral and Maxillofacial Surgery and Oral Oncology at the Hospital AC Camargo of Antonio Prudente Foundation (1988).

He specialized in Oral Pathology at USP (1988), also receiving the title of Specialist in Stomatology by the Federal Council of Dentistry. Subsequently, he held the Masters (Oral Pathology-1991) and a doctorate (Integrated Clinical-1997) at the

Faculty of Dentistry, USP, with both theses devoted to the study of oral cancer.

In 1995, he conducted studies at the University of Gothenburg, Sweden, where he returned several times since then and is now Research Associate at this University, conducting studies related to dental implants and rehabilitation in general.

He worked at the Hospital AC Camargo (Cancer Hospital) for over 18 years, Director of the Department of Stomatology 1992 to 2003.

Currently, he is Professor of Stomatology at the School of Dentistry UNIP - Universidade Paulista and also serves as Coordinator of the Center for Prevention and Detection of Oral Cancer.

He is also Senior of the Head and Neck Surgery, UNIFESP - Escola Paulista de Medicina, coordinating Maxillofacial Rehabilitation Center and directing numerous studies graduate.



Integrating Digital Technology into Facial Prosthetics

Presenter

Peter Evans, MIMPT

The integration of digital technologies into the design and manufacture workflow of facial prosthetics has been well documented by numerous centers worldwide but has taken time to be accepted into working practice globally due to constraints ideologically, technically and financially.

We will look at the current challenges of introducing disruptive technologies into a highly specialized small craft based specialty and follow the choices available at various levels, what techniques have been successful in this area and what is likely to be the influences in the future.

Lastly, we will discuss what will be the main advance of technologies in facial prosthetics - to reduce costs and increase production time of current services or should we be looking to advance service provision to areas of the world with restricted healthcare access?

About the Presenter

Peter Evans is well renowned in the field of Maxillofacial Prosthetics, being part of a team that pioneered the use of Craniofacial Implants in the UK for retention of facial prostheses at St. Lawrence Hospital, Chepstow. Studying Maxillofacial Prosthetics in London in 1987, he moved to South Wales to join the Welsh Craniofacial Implant Team in 1989. He is presently Head of Prosthetic Maxillofacial Rehabilitation at Morriston Hospital, Swansea.

His main areas of interest include facial prosthetics for children, craniofacial implantology and 3D modeling and imaging. He has published extensively on the integration of digital technologies into facial prosthetics and implants, lecturing in the UK and worldwide.

Peter is a full member of the Institute of Maxillofacial Prosthetics (IMPT), founder member of the British Facial and Audiological Implant Group (BFAIG) and a founder member and secretary of the Centre for Applied Technology in Surgery (CARTIS).



Prosthetic Provision for Patients with Atypical Defects

Presenter
Yvonne Motzkus

Patients may have unusual defects due to various previous illnesses, operational techniques or courses of treatment. In such cases, a prosthetic provision may be a great challenge for the prosthetist. To this end, various patient cases will be presented. From time to time, when providing a prosthesis in atypical defect situations, new routes have to be taken that include the surgeon and the industry. A successful provision cannot always be anticipated from the outset.

About the Presenter

Yvonne Motzkus has been engaged since 1990 as Epithetics Specialist and Anaplastologist for the Berlin Centre for Artificial Facial Parts. Since then, she has constructed several hundred epitheses. Among other things, she participated in the research project to develop an active (moveable) eye epithesis. Since 2004, she has been working in-house, together with Kerstin Menzel, at the Epithetics Laboratory of the Charité and also at the Unfallkrankenhaus Berlin. She is Vice President and founding member of “Deutscher Bundesverband der Epithetiker/ dbve” and holds international lectures at conventions and in hospitals (among others in Vietnam, China and India).

CONFERENCE PROGRAM: GENERAL SESSION

Thursday, 16:35 – 17:00



Will we ever see the end of face prosthetics in our lifetime? Will there be a better solution for our patients?

Presenter

Rosemary Seelaus, MAMS, CCA

Fifteen years ago, the term “3D Printing,” did not exist in the general public’s vocabulary. “Rapid Prototyping” was the term we used to describe what we now know as “3D Printing”—which has now become, a global household term. Children who have not yet finished grammar school are well versed in 3D Printing; and, are designing and printing prototypes at their local, free library.

In medicine, 3D Printing found its applications more than twenty years ago. Today it is used in many of the same ways, with greater design refinements, and improvements in materials. Decreased costs have also made this technology more accessible to a larger population of users.

The image of the ear growing on the back of a mouse comes to mind easily for many of us – also fifteen years ago. Similarly, 3D Printing of human cells boasts an equally long history. Progress continues.

Today, facial transplants have become a viable solution for the severely facially disfigured. And, continued research in tissue engineering offers great

promise in organ transplantation and engineering. What does the future hold for facial prosthetics?

This session offers a brief reflection on the past fifteen years in facial prosthetics, and embarks on a theoretical discussion of what we might see in the next fifteen.

About the Presenter

Rosemary Seelaus is Senior Anaplastologist at The Craniofacial Center, Department of Surgery, Division of Plastic & Reconstructive Surgery at the University of Illinois Hospital & Health Sciences System, Chicago, Illinois, USA. Prior to her current position of 10 years, Ms. Seelaus was a Clinical Anaplastologist and Research Fellow at the Institute for Reconstructive Sciences in Medicine (iRSM) in Edmonton, Canada.

Ms. Seelaus is an active, researcher, instructor and developer of advanced technology processes in anaplastology – an area of study she has pursued the entirety of her career. She has a particular interest in the contribution of digital technologies toward improving

surgical and prosthetic outcomes globally. Ms. Seelaus received a Master of Associated Medical Sciences in 1997 from the University of Illinois at Chicago, and a Bachelor of Science degree in 1989 from Northwestern University, Evanston, IL.

Ms. Seelaus has been practicing clinically for nearly seventeen years, and maintains a clinical focus on the use of osseointegrated implants and technology in facial prosthetic rehabilitation. She is past President of the International Anaplastology Association (IAA); and, past board member of the Board for Certification in Clinical Anaplastology (BCCA). Ms. Seelaus currently serves as Co-Chair for the Special Interest Group in Facial Prosthetic Rehabilitation (SIGFPR) for the International Society of Maxillofacial Rehabilitation (ISMR); and Chairs the Education Committee for the Advanced Technology in Head & Neck Reconstruction North American Leadership Group (ADT N.A.).

She likes to dance and is an avid outdoorswoman.



Collaboration between Medicine Dentistry and Anaplastology

Presenter

Marcelo Ferraz de Oliveira, DDS

This session will discuss the importance of collaboration between Medicine, Dentistry and Anaplastology to improve the quality of life of the patients through an understanding of team work.

About the Presenter

2014

Vice President of the International Anaplastology Association

2013

Vice President Elect of the International Anaplastology Association

2007

Scientific Consultant, Noble Biocare, Switzerland

2006-12

Board Member, P-I Brånemark Institute, Bauru, S.P., Brazil

Coordinator, Craniofacial Prosthetic Rehabilitation, P-I Brånemark Institute, Bauru, S.P., Brazil

2000

Director, Maxillofacial Prosthodontist and Anaplastologist, Clinica De Groot Oliveira, São Paulo, S.P., Brazil

1998-99

Scientific Consultant – Nobel Biocare – Brazil, S.P., Brazil

1995-97

Maxillofacial Prosthodontist and Anaplastologist, Brånemark Osseointegration Center, Gothenburg, Sweden

1991-94

Clinical duties outside of Residency with Cleft Lip and Craniomaxillofacial patients in the fields of prosthodontics, periodontics and osseointegration at The Hospital of Cleft Lip and Palate Research Rehabilitation, University of São Paulo, Bauru, Brazil



Prosthetics for Microtia

Presenter

Paul Tanner, CCA

In the past, surgeons have controlled and dominated the conversation of making “big” ears. With technology and social media, more and more people are discovering they can have a fantastic ear prosthesis without having any surgery. Ear prosthetics can be made for people of all ages and with approximately 700,000 people in the world born with microtia – they need our help!

About the Presenter

With a talent for art and a passion for science, **Paul Tanner** knew early on that he wanted to make anaplastology his career. He tailored an undergraduate degree with art and science to anaplastology, and earned a graduate business degree at the University of Utah. Shortly thereafter, he became one of the first non-grandfathered Certified Clinical Anaplastologists. Paul began making prosthetics in 2002

in the newly built Huntsman Cancer Hospital at the University of Utah, and in 2005 created its own independent department for facial prosthetics. Over the past ten years, Huntsman Cancer Hospital grew to be one of the best and most respected cancer hospitals in the nation. The facial prosthetics department is one of the many facets that make the hospital such a remarkable and supportive center for cancer care.

Paul enjoys conducting international continuing education courses and has worked with twenty-six different patients in training courses in Brazil, Turkey, and Colombia. Early on, Paul recognized that his greatest challenge was color matching. He coupled his knowledge of dermatology and his intrigue in optics and science to research ways to create the illusion of human skin and hone his coloring techniques.

CONFERENCE PROGRAM: GENERAL SESSION

Friday, 9:45 – 10:00



Hand and Finger Prostheses – Suction and Implant Retained

Presenters

**Paula Sauerborn, MA, CCA, Kerstin Bergström, CDT, MDhc and
Marcelo Ferraz de Oliveira, DDS**



This session will present treatment options for patients with limb amputations through conventional technique and osseointegration.

About the Presenters

Kerstin Bergström has introduced and developed the technique of Osseointegrated Retained Facial Prostheses since 1981 together with the Team of Professor Per-Ingvar Brånemark and Dr. Anders Tjellstrom at the Department of Otolaryngology at Sahlgrenska University Hospital in Gothenburg, Sweden where titanium implants for extra oral use were introduced in 1977.

For almost 35 years, she has made Osseointegrated facial prostheses and followed patients from childhood to adolescence.

She has published over 25 scientific papers and book chapters and has conducted numerous International Workshops as well lectured worldwide at International Congresses on Osseointegrated Facial Prostheses. Invitations for treating patients with OI Facial Prostheses to 28 Clinics worldwide between 1985 and 2015.

Marcelo Ferraz de Oliveira, DDS

2014

Vice President of the International Anaplastology Association

2013

Vice President Elect of the International Anaplastology Association

2007

Scientific Consultant, Noble Biocare, Switzerland

2006-12

Board Member, P-I Brånemark Institute, Bauru, S.P., Brazil

Coordinator, Craniofacial Prosthetic Rehabilitation, P-I Brånemark Institute, Bauru, S.P., Brazil

2000

Director, Maxillofacial Prosthodontist

and Anaplastologist, Clinica De Groot Oliveira, São Paulo, S.P., Brazil

1998-99

Scientific Consultant – Nobel Biocare – Brazil, S.P., Brazil

1995-97

Maxillofacial Prosthodontist and Anaplastologist, Brånemark Osseointegration Center, Gothenburg, Sweden

1991-94

Clinical duties outside of Residency with Cleft Lip and Craniomaxillofacial patients in the fields of prosthodontics, periodontics and osseointegration at The Hospital of Cleft Lip and Palate Research Rehabilitation, University of São Paulo, Bauru, Brazil

Paula Sauerborn, MA, CCA is the

Clinical Director for the Center for Prosthetic Restoration, which she has owned since 1982. Founded in 1947, her practice is one of the oldest continually operating facial and hand prosthetic firms in the United States. As CPR Inc.'s Certified Clinical Anaplastologist, Ms. Sauerborn provides prosthetic restorations for a national and international patient base. This diverse patient population is well served by the artistic and technical acuity she brings to the design and replication of highly realistic craniofacial and hand prostheses.

CONFERENCE PROGRAM: GENERAL SESSION

Friday, 10:00 – 10:25



The Upper Arm Faring Prosthesis, “The Other Prosthesis” - The Link between Anaplastology and Orthopedics

Presenter
Jan De Cubber, CDT

Aesthetical finger and hand prostheses in silicone elastomers are part of the scope of practice of the anaplastologist. For decades, anaplastologists have provided the orthopedic technician with a silicone aesthetical cover that is mounted over a modular frame, produced by the orthopedic prosthesisist. The combination results in hyper realistic arm prosthesis. Even though there are often excellent results, the patient must deal with the stigma of being the owner of a functional/aesthetical medical device.

The 3-d artistic skills of the anaplastologist, allow us to provide faring prostheses. Faring prostheses cope with the stigma of conventional prostheses by lifting the concept “prosthesis” to a higher level.

A faring arm prosthesis is a perfect copy of the healthy side of the patient. The prosthesis is composed out of:

- A printed socket with extension that is the backbone of the prosthesis.
- A hand

- An optional dorsal hand faring
- A dorsal arm faring
- An ulnar arm faring

Together with the patient, the arm and hand fairings are designed according to the wishes of the patient. The fairings, including the hand, are simply replaceable by different designs, all developed together with the patient.

The prosthesis is individually designed by the patient and changes with the patient’s mood or by the occasion.

This “other” prosthesis originates where prosthetic science meets art, 3-d design and 3-d printing. Simply put, another view on prosthesis.

About the Presenter

Jan De Cubber was trained as a CDT and Maxilla Facial Prosthesisist at the University of Brussels and got grandfathered as Certified Clinical Anaplastologist by the BCCA in 2008. Soon he became interested in orthopedic sciences. As a researcher at CTO (Belgium) and Otto Bock

Industries (Germany, Vienna), he became an expert in medical applications of silicone polymeric chemistry. As founder and driving force behind Silicon House International, he created a special department for “facial epithetics” in 1990.

Over the last 15 years, the Center for Craniofacial Epithetics (CCE) opened its doors in Brussels (B), Gent (B), and Maastricht (NL). Each year, more than 190 facial implant retained epitheses are placed using the latest 3-d technology. In 2011, he made part of the core team responsible for the first CTA (composite tissue allograft), facial transplant in Belgium. He has been the President of the International Anaplastology Association in 2012 and he is a consultant at both the department of “head, neck and facial surgery” at the University of Maastricht and at the department of “Head and Neck Surgery” of the University of Ghent. Recently CCE became a member of the V!GO – Group of Companies.



Limb Prostheses in Anaplastology

Presenter

Jiri Rosicky, ME, PhD, CPO

Purpose:

Properly applied multidisciplinary team approach can improve cosmetic appearance, function and comfort of custom made prostheses for patients with congenital abnormalities, disfigured or missing parts due to a disease or trauma. The purpose of this presentation is to demonstrate the possibilities of applications of silicone prostheses in upper and lower limb prosthetics.

Materials and Methods:

During 4-years period (2011 – 2014), we have fitted 183 patients with upper limb silicone prostheses and 46 patients with lower limb silicone prostheses. We will discuss different solutions for upper limb prostheses and for lower limb prostheses.

Standard prosthetic techniques (mould technique, direct sculpting from HTV silicones) and techniques using digital technologies (3D scanning, computational modelling, 3D printing)

will be demonstrated.

Results:

During 4-years period (2011 – 2014), the following patients have been fitted with silicone prostheses:

- 121 patients with finger prostheses (87 with one missing finger/34 with two or more missing fingers, 116 trauma/5 congenital),
- 47 patients with cosmetic hand prostheses (34 partial hand/13 full hand, 33 trauma/14 congenital),
- 12 patients with transradial silicone prostheses (9 trauma/3 congenital),
- 3 patients with transhumeral silicone prostheses (1 trauma/2 congenital),
- 15 patients with toe prostheses (13 diabetes mellitus/2 trauma)
- 13 patients with foot prostheses (8 diabetes mellitus/3 trauma/2 congenital)

- 8 patients with modular transtibial prostheses and silicone cosmetic cover
- 3 patients with modular transfemoral prostheses and silicone cosmetic cover
- 7 patients with silicone calf prostheses

During the presentation, we would like to demonstrate some clinical cases of patients with silicone upper and lower limb prostheses.

Conclusions:

Silicone upper and lower limb prostheses can bring benefits especially to patients with missing fingers/toes or to patients with partial hand/foot amputation. The application of digital technologies leads to improvement of cosmetic appearance and function of silicone prostheses.

Continued on next page

About the Presenter

Registered Prosthetist & Orthotist, **Jiri** has worked in the field of P&O since 1993 and has expertise in application of modern materials and technologies in prosthetics & orthotics. He was active in P&O education as an Assistant Professor at the University of Ostrava from 2006 till 2011. He entered the field of anaplastology in 2007 when he took a part in an Intensive Course at the Silicone Prosthetic Institute, Ashburn, USA. His professional focus is on application of digital technologies in prosthetics and anaplastology and multidisciplinary team approach. Jiri and his team are organizing educational events in the field of P&O, anaplastology and application of new materials and technologies (CAD/CAM, 3D scanning, 3D printing). He is a member of the International Anaplastology Association and the International Society for Prosthetics and Orthotics. Jiri earned a master's degree at mechanical engineering and holds a mechanical engineering science Ph.D. from the Brno University of Technology.



Hybrid Custom Made Breast Prosthesis Method, Virtual Phase

Presenter
Annie Laverdière

Our custom made breast prosthesis allows breast cancer survivors to have a more confident life after cancer when surgical breast reconstruction is not a feasible and/or a desirable option. As cancer survivors are generally not satisfied by commercial prostheses, a new customized breast prosthesis is needed.

The objective with the “Seinbiose” research project is to improve quality and comfort by replacing the traditional imprinting method with high tech scanning and 3D printing.

This presentation addresses:

- The use of digital scanning and 3D printing.
- How to improve comfort.
- Why do we scan twice, with and without a bra.
- How to scan, combining custom patient support, laser level and 3D skin markers in order to achieve meshes fusion in Z-Brush.
- Z-Brush workflow.
- 3D printed prosthesis prototype.

About the Presenter

Annie Laverdière works as an anaplastologist with Dr. Gaston Bernier and Louise Desmeules. She is currently responsible for developing virtual workflow for a custom made breast prosthesis research project. She worked for nine years as a radiation therapist at L’Hôtel-Dieu de Québec oncology center. Annie’s special training includes training for custom breast prosthesis with Jay’s McLennen’s anaplastology team in North Carolina, Z-Brush training and Go!Scan training.

CONFERENCE PROGRAM: GENERAL SESSION

Friday, 11:30-12:00

Efficiency with Technology Talk

Presenter

Rosemary Seelaus, MAMS, CCA

Technology-based solutions to clinical challenges have been well demonstrated globally in surgical and prosthetic reconstruction. While clinical applications with computer-based techniques have been described extensively in the literature, demonstrating definitive efficiencies, direct quantitative benefit, and a value-added experience for both patient and clinician have remained enigmatic.

The tools of technology are becoming increasingly more accessible which presents both promise and problem for the motivated clinician. Selection of appropriate technologies can be overwhelming. Meanwhile, demand to demonstrate improved efficiencies in patient care is increasing, together with increased patient populations and pressure to deliver better, faster patient care. Clearly defined improvements in treatment efficiencies are needed. The clinician is faced with the question, Can a technology-driven approach to care deliver the improved efficiency, reduced costs & better outcomes we require?

This presentation explores described

solutions and challenges associated with implementing computer-based solutions, and explores the potential efficiencies that technology-based clinical care has to offer.

About the Presenter

Rosemary Seelaus is Senior Anaplastologist at The Craniofacial Center, Department of Surgery, Division of Plastic & Reconstructive Surgery at the University of Illinois Hospital & Health Sciences System, Chicago, Illinois, USA. Prior to her current position of 10 years, Ms. Seelaus was a Clinical Anaplastologist and Research Fellow at the Institute for Reconstructive Sciences in Medicine (iRSM) in Edmonton, Canada.

Ms. Seelaus is an active, researcher, instructor and developer of advanced technology processes in anaplastology – an area of study she has pursued the entirety of her career. She has a particular interest in the contribution of digital technologies toward improving surgical and prosthetic outcomes globally. Ms. Seelaus received a Master

of Associated Medical Sciences in 1997 from the University of Illinois at Chicago, and a Bachelor of Science degree in 1989 from Northwestern University, Evanston, IL.

Ms. Seelaus has been practicing clinically for nearly seventeen years, and maintains a clinical focus on the use of osseointegrated implants and technology in facial prosthetic rehabilitation. She is past President of the International Anaplastology Association (IAA); and, past board member of the Board for Certification in Clinical Anaplastology (BCCA). Ms Seelaus currently serves as Co-Chair for the Special Interest Group in Facial Prosthetic Rehabilitation (SIGFPR) for the International Society of Maxillofacial Rehabilitation (ISMR); and Chairs the Education Committee for the Advanced Technology in Head & Neck Reconstruction North American Leadership Group (ADT N.A.).

She likes to dance and is an avid outdoorswoman.



15 Years Experience in Zygoma Implants: Critical Analysis Fore Use in Implant-Supported Protheses

Presenter
Hugo Nary Filho, MsD, PhD

This session will discuss the adequate treatment planning when using Zygoma implants in complex rehabilitations. Are zygoma implants always a safe option? The presentation will also cover successes and failures.

About the Presenter

Hugo Nary Filho

MsD and PhD in Oral Maxillofacial Surgery

Oral Surgeon at PI Branemark Institute Bauru-SP

Coordenador do curso de especialização em Implantologia do PI Branemark Institute Bauru

Professor and coordinator at USC - Bauru

CONFERENCE PROGRAM: GENERAL SESSION

Friday, 14:30 – 14:45



Practical Application of 3D Technology for a Nasal Prosthesis

Presenter

Amanda Y. Behr, MA, CCA, CMI, FAMI

Anaplastologists are often faced with a cost versus benefit dichotomy of integrating (3D) printing and scanning into our practices. When does the cost of technology become affordable in time and money? This presentation seeks to demonstrate one practical case example of a digital workflow to create a nasal prosthesis. CT data from a patient was utilized to generate a 3D model using Osirix software. The 3D model was refined using Pixologic Zbrush software. The refined digital sculpture was printed using a local low-cost printing source. At the end of the presentation, the following objectives will be met:

- Viewers should be familiar with the capabilities of Osirix and Zbrush software and to evaluate the use in their own practice.
- Viewers should be able to identify sources for low-cost 3D printing.
- Viewers should recognize pitfalls of relying on technology.

About the Presenter

Amanda Y. Behr is a 2004 graduate of the Johns Hopkins University School of Medicine program in Biological and Medical Illustration. She completed internships in anaplastology with Juan Garcia at the Johns Hopkins Facial Prosthetics Clinic and with Gillian Duncan for Prosthetics at Graphica Medica. She is a Certified Medical Illustrator and Certified Clinical Anaplastologist.

Amanda served as Director of Medical Illustration for Quality Medical Publishing, Inc (QMP) for over 8 years. In January of 2013, Amanda joined the faculty of the Department of Medical Illustration at GRU as Assistant Professor. In September 2014, Amanda became Clinical Director and Anaplastologist for GRU's Clinic for Prosthetic Restoration serving patients who need facial and somatic prosthetics.

Amanda serves on the board of the International Anaplastology Association, and in May 2014 became the President. Amanda is a past member of the Board of Directors for the Vesalius Trust. She received numerous awards for her work as an illustrator and art director including three Certificates of Merit from the Association of Medical Illustrators. In addition, she has more than 65 publications to her credit. In May of 2015, Amanda was named Interim Chair of the Georgia Regents University Department of Medical Illustration. In July of 2015, Amanda became the Program Director to the Georgia Regents University Medical Illustration Graduate Program.



Medical Tattooing

Presenter

Dawn Forshaw

Medical Tattooing can be the answer to many patients by offering 247 solutions, by adding colour to the body anywhere colour is missing, post-surgery, injury, defect or trauma.

About the Presenter

Dawn Forshaw is the founder, co-owner and Managing Director of Finishing Touches.

Finishing Touches was formed in 1996 as a clinic, offering first class cosmetic and medical tattoo procedures. Dawn was invited to work with HABIA writing the original NVQ for micropigmentation, which is still the benchmark set today for governmental authorities. She recently worked to update the standard, which now includes medical as well as cosmetic tattooing procedures.

In 1970, she opened a training school to push boundaries in procedural excellence. Dawn then set up a product supplies company and created a unique range of micropigmentation machines and pigments, all conforming to EU medical grade certification.

Co-director, Samantha Jones, and Dawn head a unique team of specialist who fly all over the world teaching best practice treatments with realistic results.

The company's solid reputation is synonymous with professionalism and a commitment to "improving procedures through education".

Dawn is now focusing on 2015 and moving back into the procedures world. She has a private practice in London, Kensington, and is a consultant for a top Harley Street clinic majoring on burns and scars.

When she has some free time she is always relentlessly networking. It's hard drinking all that wine and attending all those 3 course dinners!

CONFERENCE PROGRAM: GENERAL SESSION

Friday, 15:35 – 15:50



Obtaining 3D Models for Maxillofacial Rehabilitation from a Mobile Device: Photogrammetry

Presenter
Rodrigo Salazar Gamarra

Purpose

Develop a technique of using photogrammetry as a method for making digital facial impressions and obtaining 3D models of patients with facial defects by a mobile device.

Methods and Materials

Patients who attended the Bucomaxillofacial Protheseses of the Universidade Paulista for maxillofacial prosthetic treatment, and voluntarily accepted to participate were selected. With the use of a mobile device, pictures were captured of patient's facial anatomy and converted into digital 3D models by methods of photogrammetry. The images were processed by open source software and transformed into a *.stl model for analysis and printing. The resultant digital models were evaluated for visual and technical integrity of form by independent criteria. The technical process and resultant models were described and analyzed for technical and clinical usability.

Results

Generating 3D models to make

digital face impressions is possible by the use of photogrammetry with photos taken by a mobile device. The study showed a method to optimize the quality of images, and discusses technical concerns of file manipulation in consideration of their clinical application and 3D printing.

Conclusions

Alternative methods for capturing patient facial anatomy is possible using a mobile device by obtaining 3D models from photographs for use in maxillofacial prosthetic treatment.

Clinical Implications

Free and open source software and low cost equipment can be used to obtain 3D models for making digital face impressions for maxillofacial prostheses, possibly eliminating the need for a physical impression in some patients.

About the Presenter

Dr. Rodrigo Salazar is a Peruvian dentist, Specialist in Oral Rehabilitation, and Masters student in maxillofacial prosthodontics in the Paulista University.

He serves as Secretary of the Latin American Society of Maxillofacial Rehabilitation, and is a Member of the Board of the Peruvian Society of Oral Rehabilitation.

Dr. Salazar is also a Professor at the Peruvian University of Applied Sciences.

He is a Member of the International Anaplastology Association, Member of the International Society of Maxillofacial Rehabilitation, and Member of the American Academy of Implant Prosthodontics. Dr. Salazar has lectured internationally on maxillofacial rehabilitation.

He also received an Honor of Merit and special recognition for volunteer social work in Peruvian undeveloped communities, achieving 90 social projects and activities in 25 districts of Perú.

CONFERENCE PROGRAM: GENERAL SESSION

Friday, 15:50 – 16:10

Mistakes and Remakes

Presenter

Paul Tanner, CCA

Our goal is to make people happy and be efficient as possible. We would save time and money, and our patients would be so happy if we could simply make the prosthesis right the first time. Unfortunately, that is not reality. In a field of imperfect art and the constant need for experimentation and innovation, this presentation will help work you efficiently and effectively.

About the Presenter

With a talent for art and a passion for science, **Paul Tanner** knew early on that he wanted to make anaplastology his career. He tailored an undergraduate degree with art and science to anaplastology, and earned a graduate business degree at the University of Utah. Shortly thereafter, he became one of the first non-grandfathered Certified Clinical Anaplastologists. Paul began making prosthetics in 2002 in the newly built Huntsman Cancer

Hospital at the University of Utah, and in 2005 created its own independent department for facial prosthetics.

Over the past ten years, Huntsman Cancer Hospital grew to be one of the best and most respected cancer hospitals in the nation. The facial prosthetics department is one of the many facets that make the hospital such a remarkable and supportive center for cancer care.

Paul enjoys conducting international continuing education courses and has worked with twenty-six different patients in training courses in Brazil, Turkey, and Colombia. Early on, Paul recognized that his greatest challenge was color matching. He coupled his knowledge of dermatology and his intrigue in optics and science to research ways to create the illusion of human skin and hone his coloring techniques.

A Temporary Nasal Prosthesis for a Patient with Recurrent SCC

Presenter

Paula Rojas

Purpose: To demonstrate the challenge of rehabilitating a patient with total rhinectomy and partial maxillectomy while is diagnosed with a recurrent SCC receiving palliative therapy.

Abstract: A patient with two previous episodes of SCC is referred to the service for a nasal prostheses. While the treatment is performed, new lesions were found requiring adaption of the treatment plan. The treatment

option for the patient is palliative chemotherapy.

A nasal prostheses is needed urgently to improve self-esteem and quality of life. There are several goals during the treatment: retention, marginal fit and the anatomical changes of the tumors and their effect upon the soft tissue contours in relation to the fit and shape of the prosthesis.

CONFERENCE PROGRAM: POST-CONFERENCE COURSE

Saturday, 9:00-17:00



Osseointegrated Implants in Craniofacial and Hearing Rehabilitation

Presenters

Kerstin Bergström, CDT, MDhc, Arthur Castilho, PhD and Anders Tjellström, MD, PhD, D.Sc.hc



The aim of this course is to give an opportunity to learn the surgical technique including hands-on opportunities with osseointegrated implants for the Baha System for hearing impairment and rehabilitation with facial prostheses.

The course will address the following topics:

- Historical background
- Introduction to Osseointegration
- Hearing through bone conduction – Baha System
- Osseointegrated implants for craniofacial prostheses
- Surgical techniques for Baha and facial prostheses
- Hands on surgical training

About the Presenters

Kerstin Bergström has introduced and developed the technique of Osseointegrated Retained Facial Prostheses since 1981 together with the Team of Professor Per-Ingvar Brånemark and Dr. Anders Tjellström at the Department of Otolaryngology at Sahlgrenska University Hospital in Gothenburg, Sweden where titanium implants for extra oral use were introduced in 1977.

For almost 35 years, she has made Osseointegrated facial prostheses and

followed patients from childhood to adolescence.

She has published over 25 scientific papers and book chapters and has conducted numerous International Workshops as well lectured worldwide at International Congresses on Osseointegrated Facial Prostheses. Invitations for treating patients with OI Facial Prostheses to 28 Clinics worldwide between 1985 and 2015.

Arthur Castilho Degree in Medicine from the University of São Paulo. Residency and otorrinolaringologia the Hospital of the USP ; Doctorate from the Faculty of Medicine, USP ; Specialized Internship in Surgery Otolological and Lateral Skull Base by USP. He is currently a doctor of Unicamp Clinical Hospital and surgeon cochlear implant group of UNICAMP .

Anders Tjellström is an ENT with the Department of Otolaryngology at the Sahlgrenska University Hospital. Tjellström's doctoral work at the University of Gothenburg brought him into contact with Professor Per-Ingvar Brånemark, a pioneer in the field of osseointegration, in 1972. In that same year, Tjellström and Brånemark collaborated to treat the first patient with a Baha System. Ever since his first patient, Tjellström has worked tirelessly to restore hearing to thousands of people around the world.



CONFERENCE PROGRAM: POST-CONFERENCE COURSE

Saturday, 8:30-12:00



Craniofacial Reconstruction through Plastic Surgery

Presenters

Dr. Ricardo Lopes da Cruz, Dr. Dov Goldenberg, Dr. Terence Farias, Dr. Tomaz Nassif and Dr. Marcelo Ferraz de Oliveira

The aim of this course is to give an in-depth understanding on Craniofacial Reconstruction through Plastic Surgery.

The course will address the following topics:

- Facial Identity
- Oncologic Surgery on the face
- Prototyping
- Microsurgery
- Facial Transplant

About the Presenters

Dr. Ricardo Lopes da Cruz completed his degree in Medicine at the Federal University of Rio de Janeiro in 1977. Dr. Cruz then did his Residency in General Surgery at the Hospital of Federal Ipanema; in Head and Neck Surgery at the National Cancer Institute (RJ); and completed his training in surgery Cranio-Maxillofacial for three years in the Department of Plastic Surgery at the Medical School of Graduate Studies at PUC-RJ under the coordination of Prof. Ivo Pitanguy. He created and headed the Surgery Department of Maxillofacial Federal Hospital de Ipanema for twenty years (1983-2003). He is co-author of Skull Surgery and Maxillofacial: The Osteotomies Aesthetic Face (published in 1987 by Medsi publisher) together with Jorge Psillakis, Silvio Zanini, José Melega and Edgard Costa.

Terrance Farias Master in Oncology at INCA; PhD in Oncology at INCA; Head of Surgery Section and Neck, INCA; Professor of Surgery and Head and Neck PUC- RJ; Member of the Brazilian College of Surgeons

Marcelo Ferraz de Oliveira, DDS

2014: Vice President of the International Anaplastology Association

2013: Vice President Elect of the International Anaplastology Association

2007: Scientific Consultant, Noble Biocare, Switzerland

2006-12: Board Member, P-I Brånemark Institute, Bauru, S.P., Brazil

Coordinator, Craniofacial Prosthetic Rehabilitation, P-I Brånemark Institute, Bauru, S.P., Brazil

2000: Director, Maxillofacial Prosthodontist and Anaplastologist, Clinica De Groot Oliveira, São Paulo, S.P., Brazil

1998-99: Scientific Consultant – Nobel Biocare – Brazil, S.P., Brazil

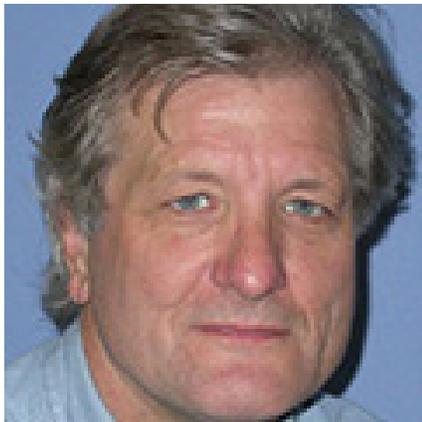
1995-97: Maxillofacial Prosthodontist and Anaplastologist, Brånemark Osseointegration Center, Gothenburg, Sweden

1991-94: Clinical duties outside of Residency with Cleft Lip and Cranio-maxillofacial patients in the fields of prosthodontics, periodontics and osseointegration at The Hospital of Cleft Lip and Palate Research Rehabilitation, University of São Paulo, Bauru, Brazil



CONFERENCE PROGRAM: POST-CONFERENCE COURSE

Saturday, 14:00-17:00



Complex Facial Reconstruction by Vascularized Composite Allo-transplantation: Synergy Between Surgeon, Anaplastologist and Clinical Engineer

Presenters

Hubert Vermeersch, MD, PhD, Ir. Maarten Zandbergen and Jan De Cubber, CDT



The aim of this course is to give an in-depth understanding of composite tissue allotransplantation performed at the Ghent University Hospitals, approached from three different angles, creating a unique and comprehensive overview of this highly complex surgery: the story of the surgeon, the anaplastologist and the clinical engineer.

The course will address the following topics:

- Facial Transplant
- The role of the Anaplastologist in this procedure
- Pre-operative 3D virtual surgical planning
- 3D printed surgical guides and anatomical models



The surgeon

Ghent University Hospitals was preparing to create a Center for VCA since mid-2009. At the end of 2010 a major facial trauma was admitted to our hospital. It was obvious from the start that classic flap reconstructive procedures would not be sufficient. However, after temporary reconstruction with a three-dimensionally tapered anterolateral free thigh flap (ALT), the patient

and family clearly wanted further reconstruction. Facial transplantation was proposed and accepted. Agreement from Ghent University Hospitals' Ethical Committee and Hospital Management was secured, followed by the patient's informed consent. Multiple team meetings and cadaver dissection exercises were held in 2011, resulting in scripts for the surgical procedure in both the donor and the recipient with photographic and textual descriptions of every step. Jan De Cubber (Anaplastology) and Materialise (3D virtual planning - preparation of models and surgical templates) were invited to participate in all of these planning sessions. By the end of 2011, when a suitable donor became available, we were fully prepared and the surgical procedure proceeded flawlessly in two adjacent operating rooms. More than 2 years after transplantation, the patient is doing well, continuing to functional rehabilitate under the guidance of prof. K. Van Lierde, member of the team and head of the University Speech and Language Department.

During this presentation, we will give the audience an overview of these steps, without disclosing protected patient information.

Continued on next page

The anaplastologist

On December 31, 2011, the effectuation of the first facial VCA at the University of Ghent, Belgium took place. The intervention was born approximately three years earlier, with the formation of a multi-disciplinary quest looking for answers on to questions that had never been asked before. This presentation is one part of a trilogy that highlights the intense collaboration of the surgical team, the anaplastologist and the clinical engineer guided by cutting edge 3-d technology.

Prof Vermeersch thought that the input from the anaplastologist in the team was crucial from the very start, and all members stated in hindsight that it was an extremely important step. Although the initial intended contribution was limited to the development of a production protocol for the donor's death mask, the anaplastologist's extensive experience with 3D virtual surgical planning and 3D printing of anatomical models largely contributed to the successful outcome.

Two other areas in which the anaplastologist provided invaluable input were the making of a support structure to transport the graft from the donor hospital to the Ghent University Hospital, if necessary, and in the production of an bone-anchored orbital epithesis. As an extensive amount of bone was harvested from the donor, a supporting structure replacing this missing hard tissue was required to support the donor mask. A 3D printed model, produced to match the planned bone graft, proved to be an excellent scaffold for the final donor mask. After the facial transplantation was completed, an implant retained orbital epithesis was manufactured. The orbital implants were pre-operatively planned virtually in 3D to ensure a more predictable outcome that combines optimal bone quality to ensure implant stability and implant locations to ensure ideal anchors for the epithesis.

In conclusion we learned that applying pre-operative virtual surgical planning in 3D in combination with 3D printed anatomical models and surgical guides resulted in a predictable and high quality outcome and most importantly, a satisfied patient.

The clinical engineer

A clinical engineer enables the surgeon and anaplastologist to apply the principles of pre-operative 3D virtual surgical planning and utilized 3D printed surgical guides and anatomical models for a specific patient. For this highly complex VCA, principles and tools that are used routinely in reconstructive and orthognathic surgery, were adapted to support this unique surgery.

To obtain a 3D virtual model of the patient's hard and soft tissues, a CT scan of the patient was imported in the

DePuySynthes ProPlan CMF software. This served as a basis visualize the extent of the deformity and start the 3D virtual surgical plan. In close collaboration with the surgical team, the Materialise clinical engineer provided a preliminary surgical plan that was finalized during multiple interactive planning sessions.

With an overlaying technique, the ideal size and shape of the hard tissue graft were determined and 3D printed to provide a tactile reference for the surgical team that was extensively used during cadaver trials. In addition to the graft model, an anatomical model of the patient's anatomy prior to transplantation and surgical cutting guides were provided which proved to be ideal communication tools for the donor and recipient surgical teams.

After completion of the surgery, a post-operative CT scan was used to compare the pre-operative surgical plan with the post-operative outcome.

About the Presenters

Dr. Hubert Vermeersch is currently Head of the Department for Head and Neck Surgery of the Gent University Hospitals and Academic Departmental Head of the Nose, Ear, Throat and Logopaedics and Audiology Department of the Ghent University. He is also heavily involved in academic training of Plastic and Reconstructive Surgeons in Southern Countries by his project 'The Creation of a Reference Centre for Craniofacial anomalies and for the treatment of Benign Mandibular Tumours' in Kampala, Uganda.

He finished his medical studies in 1975, got his board certification for ENT in 1980, finished a two year fellowship for ear surgery with Prof Paparella at the University of Minneapolis, Minnesota in 1982 and worked as an associate professor at the Ghent University ENT department till 1988. Between 1989 and 1995 he trained to become a board certified Plastic Surgeon after which he started the Head and Neck Surgery Department at the Ghent University Hospitals until today. He is the author of 89 international peer-reviewed publications. His current surgical work is mainly in the field of facial reconstructive surgery using conventional techniques and CTA (composite tissue allograft).

Jan De Cubber was trained as a CDT and Maxilla Facial Prosthesis at the University of Brussels and got grandfathered as Certified Clinical Anaplastologist by the BCCA in 2008. Soon he became interested in orthopedic sciences. As a researcher at CTO (Belgium) and Otto Bock Industries (Germany, Vienna), he became an expert in medical applications of silicone polymeric chemistry. As founder and driving force behind Silicon House International, he created a special department for "facial epithetics" in 1990.

Continued on next page

CONFERENCE PROGRAM: WORKSHOPS

Saturday, 8:00 – 9:00

Ocular Fitting

Presenters

Robert Robinson, BS, MSA, CCA and Kuldeep Raizada, PhD, B.C.O.

The workshop will cover a variety of ocular impression taking techniques and impression materials. Design and fitting techniques for oculars will be discussed.

About the Presenters

Robert Robinson is a Dental Maxillofacial Prosthetist in private practice and Clinical Anaplastologist for Walter Reed National Military Medical Center. Robert received his Bachelors of Science in Healthcare Management from Southern Illinois University and a Master of Science degree in Health Services Administration from Central Michigan University. Robert received his specialty training in dental laboratory prosthetics from the Navy School of Dental Assisting and Technology, San Diego, CA and Anaplastology/Maxillofacial Prosthetics from the Naval Post-graduate Dental School, Bethesda, MD. Robert serves on the Board for Certification in Clinical Anaplastology and holds the position of Treasurer. Robert is also a Past-

President of the International Anaplastology Association.

Kuldeep Raizada completed his basic optometry education at Gandhi Eye Hospital, Aligarh, and had his fellowship in Optometry & Vision Science, and training in ocular prosthesis at L V Prasad Eye Institute, Hyderabad, where he was also Founder and Head of the Department of Ocular Prosthesis Services till 2009. He completed a second fellowship, in Anaplastology, at MD Anderson Cancer Center, Houston. He has also been trained by the top most Ocularist and Anaplastologist in the United States of America and in the United Kingdom. He holds a Doctor in Philosophy (PhD) under Dr. S. K. Agrawal from Calcutta on Prosthesis. Kuldeep Raizada is one of the very few Ocularist outside of the USA who is Board Certified by NEBO (National Examination Board of Ocularist) and also a Diplomat Ocularist from American Society of Ocularists, USA.

Continued from previous page

Over the last 15 years, the Center for Craniofacial Epithetics (CCE) opened its doors in Brussels (B), Gent (B), and Maastricht (NL). Each year, more than 190 facial implant retained epitheses are placed using the latest 3-d technology. In 2011, he made part of the core team responsible for the first CTA (composite tissue allograft), facial transplant in Belgium. He has been the President of the International Anaplastology Association in 2012 and he is a consultant at both the department of “head, neck and facial surgery” at the University of Maastricht and at the department of “Head and Neck Surgery” of the University of Ghent. Recently CCE became a member of the V!GO – Group of Companies.

Ir. Maarten Zandbergen Contact Maarten Zandbergen at Maarten.Zandbergen@materialise.com

CONFERENCE PROGRAM: WORKSHOPS

Saturday, 9:00 – 10:00



Demonstration on Finger Epitheses

Presenter

Jan De Cubber, CDT

The demonstration will explain step-by-step how to make a finger epitheses. By combining a multi-layer silicone technique, with 3-d computer technology a new generation of finger and hand epitheses will make a difference for our patients. We analyzed all existing production techniques, and tried to isolate the interesting parts of each one of them. That precious information was then confronted with the state of the art of computer aided design and manufacturing, resulting in the new generation of finger and hand production protocol.

About the Presenter

Jan De Cubber was trained as a CDT and Maxilla Facial Prothesist at the University of Brussels and got grandfathered as Certified Clinical Anaplastologist by the BCCA in 2008. Soon he became interested in orthopedic sciences. As a researcher at CTO (Belgium) and Otto Bock Industries (Germany, Vienna),

he became an expert in medical applications of silicone polymeric chemistry. As founder and driving force behind Silicon House International, he created a special department for “facial epithetics” in 1990.

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CONFERENCE PROGRAM: WORKSHOPS

Saturday, 10:00 – 12:00

Application of ZBrush for Anaplastology

Presenter

Ales Grygar, MgA

This course is intended for those who want to expand their knowledge business into Virtual Planning using ZBrush software

Main topics are:

- Importing patient's 3D data into ZBrush software
- Digital sculpting of a prosthesis from scratch
- Modification of existing virtual 3D model of a facial part
- 3D visualization of a fitted prosthesis
- Preparing data for 3D printing
- Demonstration of 3D printed models

CONFERENCE PROGRAM: WORKSHOPS

Saturday, 12:00-13:00

Clinical Evaluation of Patients with Anophthalmia

Presenter

Margarita Rosa Caicedo

The following topics will be addressed during this presentation: Etiology, Pathology, Surgical Procedures; Techniques for Insertion and Removal of Prosthesis (video); and, Instructions and Recommendation on How to Use the Prosthesis.



Silicone & Magnetic Retention

Presenter

Mark Waters, PhD

This course will demonstrate the use of a new Magnetic Attachment for auricular prostheses. In addition, we will demonstrate the use of silicones, and bonding the magnet into the silicone using more than one silicone and discuss the various primers and solvents available for a success implant retained prosthesis.

About the Presenter

Professor Mark Waters has over 20 years of research experience in the area of biomaterials, and particularly in the development of novel silicone rubber materials. He is currently a Professor in Biomaterials at Cardiff University as well as Director of Technovent Ltd. He has published over 50 papers in national and

international peer reviewed journals in the area of polymeric biomaterial development. Professor Waters has been responsible for the development of numerous materials for use in maxillofacial prosthetics and dentistry, in addition to industrial materials. Technovent manufacturers and markets worldwide the Magna-Cap magnetic retention system for use with dental and craniofacial prostheses. The technology and functionality of Technovent products has been established over many years of research, development and clinical use. Since becoming director of Technovent, Professor Waters has enhanced their product line and has been instrumental in developing new innovations in magnetic retention for facial and dental prostheses.

CONFERENCE PROGRAM: WORKSHOPS

Saturday, 15:00-17:00

Putting Colour Back Into People's Lives

Presenter
Dawn Forshaw

This course will be a live tattooing demonstration on a patient. Medical Tattooing can be the answer to many patients by offering 247 solutions, by adding colour to the body anywhere colour is missing, post-surgery, injury, defect or trauma.

About the Presenter

Dawn Forshaw is the founder, co-owner and Managing Director of Finishing Touches.

Finishing Touches was formed in 1996 as a clinic, offering first class cosmetic and medical tattoo procedures. Dawn was invited to work with HABIA writing the original NVQ for micropigmentation, which is still the benchmark set today for governmental authorities. She recently worked to update the standard, which now includes medical as well as cosmetic tattooing procedures.

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excellence. Dawn then set up a product supplies company and created a unique range of micropigmentation machines and pigments, all conforming to EU medical grade certification.

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CONFERENCE PROGRAM: POSTER PRESENTATIONS

Thursday, 17:00 – 18:00

Assessing the Color Stability of Pigments Used for Ocular Prostheses Characterization

Simone Cristina Kawabata

São Paulo Oncocenter Foundation – FOSP
São Paulo, São Paulo, Brazil

Beatriz Silva Câmara Mattos

Dentistry School - University of São Paulo – FOUS
São Paulo, São Paulo, Brazil

Combined Prosthesis with Magnetic Retention – A Case Report

Geyli Anayanci Santacruz Benitez

Hospital General de México
Mexico City, Mexico

Celia Minerva Diaz Aguirre

Hospital General de México
Mexico City, Mexico

Composite Prosthetic Restoration for Long Transradial Amputee

Gregory G. Gion, MMS, CCA, BOCP

Medical Art Prosthetics, LLC
Madison, Wisconsin, USA

Dedicated Patient Support for Breast Prosthesis Scanning

Annie Laverdière

L'Hôtel-Dieu de Québec hospital
Québec, Québec, Canada

Louise Desmeules

L'Hôtel-Dieu de Québec hospital
Québec, Québec, Canada

Gaston Bernier, FADQ, DMD

L'Hôtel-Dieu de Québec hospital
Québec, Québec, Canada

Laser Scanner and the Orbital Region of the Face - An Open Eyes Technique

Beatriz Silva Câmara Mattos

Dentistry School - University of São Paulo – FOUS
São Paulo, São Paulo, Brazil

Simone Cristina Kawabata

São Paulo Oncocenter Foundation – FOSP
São Paulo, São Paulo, Brazil

Prosthetic Ear in an Oncologic Patient

Valle González Ivette Maricela

Hospital General de México
Mexico City, Mexico

García Becerra Raquel Mayo

Hospital General de México
Mexico City, Mexico

Continued on next page

Reconstruction of Complex Facial Defects Covered with Facial Prosthetics

Florian E. Raithel

Epitek Epithetik-Zentrum
Hockenheim, Germany

Dr. Sylvia Thielges

HNO BWZK Koblenz, General Army Hospital
Koblenz, Germany

Dr. Jörg-Michael Nebel

HNO BWZK Koblenz, General Army Hospital
Koblenz, Germany

Dr. Roland Jacob

HNO BWZK Koblenz, General Army Hospital
Koblenz, Germany

Rehabilitation of Facial Defects with Steco Magnet Connected Prosthetics

Florian E. Raithel

Epitek Epithetik-Zentrum
Hockenheim, Germany

Prof. Dr. Robert Sader

Johann Wolfgang Goethe University Hospital
Frankfurt, Germany

Additional Co-Authors: Jonas Lorenz, Anna Teiler, Dr. Thorsten Stenger, Dr. Shahram Ghanaati

Ultraviolet Degradation of the Scleral Resins

Denise Moral

Nakamura Faculdade de Odontologia da Universidade de São Paulo São Paulo, São Paulo, Brazil

Simone Cristina Kawabata

São Paulo Oncocenter Foundation – FOSP
São Paulo, São Paulo, Brazil

Unusual Cases, Simple Solutions

Louise Desmeules

L'Hôtel-Dieu de Québec hospital
Québec, Québec, Canada

Annie Laverdière

L'Hôtel-Dieu de Québec hospital
Québec, Québec, Canada

Gaston Bernier, FADQ, DMD

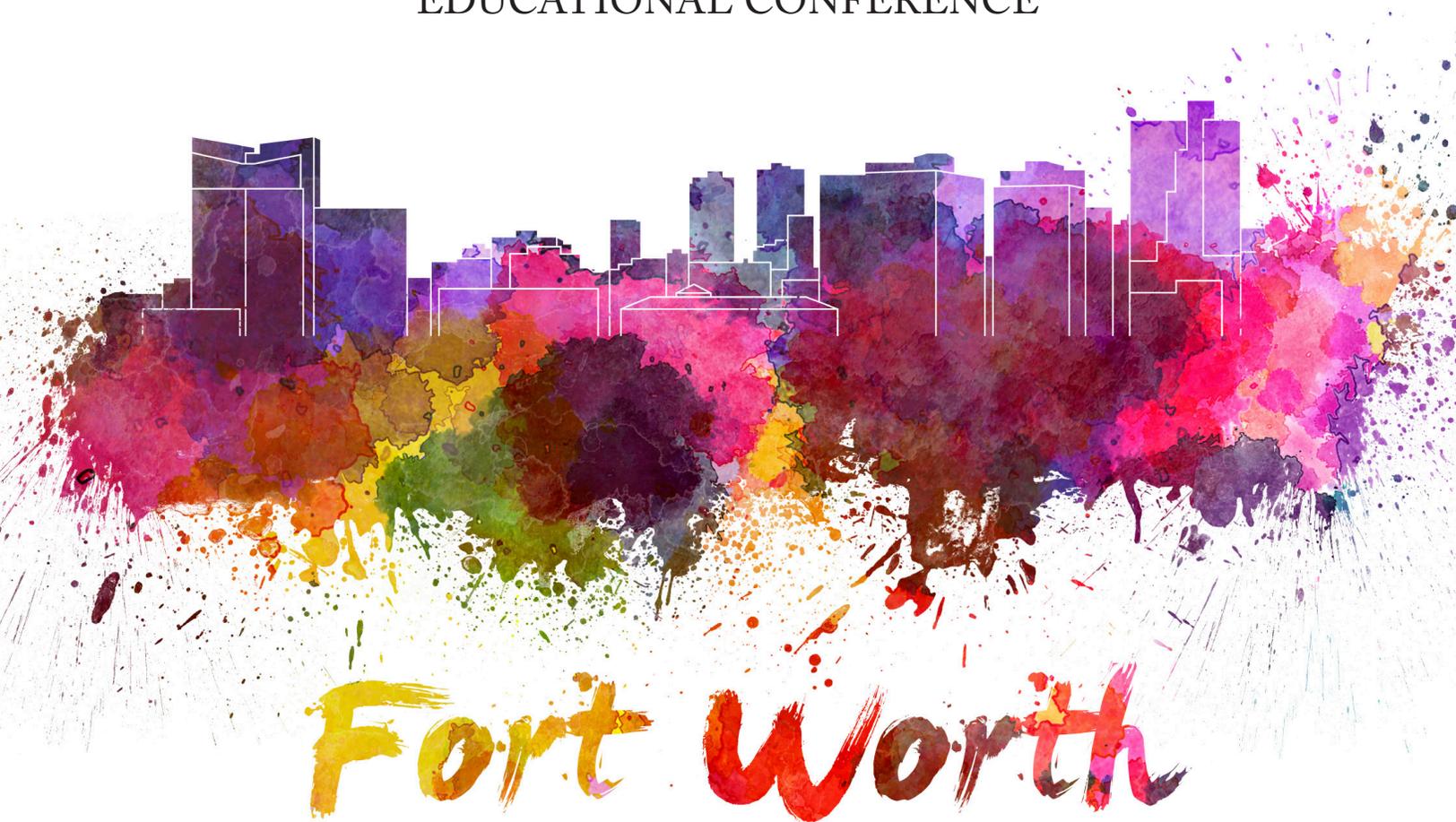
L'Hôtel-Dieu de Québec hospital
Québec, Québec, Canada

SAVE THE DATE

JUNE 1-5, 2016

International Anaplastology Association

30TH ANNUAL
EDUCATIONAL CONFERENCE



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Fort Worth, Texas, 76102, USA