

International Anaplastology Association

# Synergistic Collaboration

30TH ANNUAL  
EDUCATIONAL CONFERENCE

*Fort Worth, Texas, USA*





## Welcome

Dear Colleagues

As President of the International Anaplastology Association, I am pleased to welcome you to the 30th Annual Educational Conference that will take place in Fort Worth, Texas. The theme chosen by our Conference Planning Committee for this year will be Synergistic Collaboration, which translates the importance of collaboration among professionals from all areas of expertise involved in the rehabilitation of our patients with a common goal to improve their “Quality of Life”.

Many congratulations to my dear friend and Conference Chair Suzanne Verma for her wonderful and endless dedication to organize such a fantastic scientific program.

To our keynote speakers, invited speakers and colleagues, please accept my warmest regards and be very welcome to this years “IAA Family Reunion”.

It has been an honor and privilege to serve as President of the IAA this year.

I want to thank for the tremendous support from the IAA Board of Directors and our Executive Director Rachel Brooke, who dedicated their time and expertise to the development of this Conference.

This meeting will be a great opportunity not only to expand our knowledge by exchanging our experiences with the most renowned and talented speakers, some already known by you and some new ones.

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

With my very best regards,

**Marcelo Ferraz de Oliveira, DDS**  
*IAA President*

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*“Synergistic Collaboration” is something that we all experience as multidisciplinary team members, blending art, science and technology with transformation and compassion.*

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Dear Colleagues,

It is my pleasure to welcome you to Texas for the 30th annual conference of the International Anaplastology Association. This year’s theme, “Synergistic Collaboration” is something that we all experience as multidisciplinary team members, blending art, science and technology with transformation and compassion.

As anaplastologist at Texas A&M Baylor College of Dentistry, I engage in a team approach to patient care. Clinicians from a variety of disciplines work together to form comprehensive treatment plans with both surgical and prosthetic solutions.

As specialists from around the world, we all strive to find solutions to restore the form, function, and self-esteem for our patients. It is the experiences and ideas that each of us bring to the organization that enrich our knowledge and ignite innovative thinking!

We are honored to have such a dynamic group of renowned multidisciplinary experts in this year’s program. I would like to thank the IAA board, planning committee, and particularly Rachel Brooke, our Executive Director. Organizing a conference is a true collaboration, and we have had a wonderful team working together for a common goal.

Analogous to our theme is our host city Ft. Worth, Texas. With the tagline of “Cowboys and Culture,” the city offers a blend of western heritage that is quintessentially Texas, with a world-renowned cultural district. I hope you have the opportunity to enjoy the city during your free time. Please plan to join us at the banquet where you can experience the true American West at the historic stockyards. You are assured to see an authentic cowboy ‘moseying’ down the road in boots and hat!

Whether you are a long time member, or this is your first time attending the meeting, we welcome you to share in the dialog and enjoy time with your fellow colleagues. I welcome you to help the IAA in celebrating the union of art and science!

Sincerely,

**Suzanne Verma**, MAMS, CCA  
*Conference Program Chair/IAA Vice President*

# Sponsors

## Gold Sponsors

### International Center of Education

The International Center of Education is a joint collaboration between two of the world's leading manufacturers and suppliers of maxillofacial prosthetic materials; Factor II (USA) and Technovent (UK). Factor II has been the major supplier of maxillofacial products since 1978. Together with Technovent, we continue the development of silicone elastomers, and Maxillofacial components, materials, and the newest advances in technology for the future of this industry.

### 3D Systems

3D Systems offers healthcare-centric 3D printing and 3D visualization technology. The company's surgical tools include accurate 3D printed anatomical models, advanced virtual reality simulators, direct metal printing for implants and instrumentation, virtual surgical planning (VSP®) and personalized 3D printed surgical guides. 3DS is developing true patient-specific healthcare solutions, one by one or at scale, designed to change the future of personalized medicine.

## Silver Sponsors

### 3dMD

Learn how a progressive motion sequence of anatomically-precise 3D surface images will help promote and advance the creation of new prosthetics and wearable technologies that precisely adapt to a person's shape with expression and/or movement and enhance performance. Anaplastologists, prosthetists, and other facial reconstruction specialists in the 3dMD customer community routinely capture 3dMD images of patients, import the 3dMD images into various rapid prototyping software, and then fabricate prosthetics with a range of 3D printers.

### Bressanté

We at Bressanté care about your comfort, that's why we have created several options for women that need some help following breast surgery. Wearing a breast prosthesis is an option that women should be aware of. Whether you have had a mastectomy, lumpectomy or some other type of surgery—we can create a personalized, soft and lightweight breast prosthesis that will suit your needs and lifestyle.

We believe in innovation and we come up with awesome prosthetic solutions based on feedback from our clients, all beautiful women just like you.

Wendy Smith is the founder and president of Bressanté and a Certified Prosthetist and Clinical Anaplastologist. Over almost three decades Wendy has built an international reputation for excellence in the development of new techniques for creating highly detailed, medically and

aesthetically accurate, fine prosthetic devices such as hands, fingers, ears, noses and breasts. Wendy is passionate about helping women with breast cancer. She is an advocate and has spoken at several international conferences on how the medical profession can offer more practical advice for dealing with the body changes and personal challenges that often accompany a diagnosis of breast cancer.

### 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.

### MedCAD

MedCAD is committed to providing rapid, high quality customized surgical solutions. Innovative services and implants are our passion. The industry is realizing the value of 3D model visualization coupled with surgical implants, making the AccuPlan Surgical Suite a preferred choice in surgical planning by many doctors.

MedCAD custom surgical solutions press beyond the cutting edge of technology as the premiere custom PEEK

engineering firm. Coupled with 3D printed solutions, MedCAD provides revolutionary patient-specific devices preferable to the industry standard. MedCAD operates to be the most sales-friendly medical company in the world, consequently meeting distributor needs. MedCAD implants and model aides complement titanium plating lines due to the customized nature of the products.

MedCAD continues to grow alongside our strong model, planning and implant segments. Our biomedical engineers, surgeons, entrepreneurial professionals work tirelessly to provide high quality products and services.

### **Panthera Dental**

Headquartered in Quebec City, Canada, Panthera Dental is a world leader in CAD/CAM prosthetic implant solutions and dental sleep appliances.

The rapid growth of the company is based on the values that are very dear to us, namely highly attentive customer care, quality products, as well as innovation, and on its collaboration with many key opinion leaders in the dentistry field.

Both a pioneer and a leader, Panthera Dental has successfully combined creativity, science and know-how to develop its proprietary innovative technology and is now able to offer next-generation products to the dental industry worldwide.



# IAA Conference Program

## June 1–4, 2016

### Wednesday, June 1, 2016

#### Pre-Conference Course Programming

9:00 am – 5:00 pm	<b>Pre-Conference All Day Workshop</b> Materials, Manipulation, Matching and Magnets Technovent and Factor II “Hands On” Technique Course	Peter Evans, MIMPT & Mark Waters, PhD
11:30 am – 1:30 pm	<b>Pre-Conference Workshop</b> Simply Bressanté Breast Prostheses	Wendy A. Smith C.P. (c), CCA
2:00 pm – 3:00 pm	<b>Pre-Conference Workshop</b> Ocular Fabrication	Louis Gilbert & Robert Robinson, BS, MSA, CCA
3:10 pm – 4:10 pm	<b>Pre-Conference Workshop</b> Digital Bar Design for Milled Superstructures	Bernard Robichaud
4:20 pm – 5:20 pm	<b>Pre-Conference Workshop</b> Clinical Photography Workshop	Francisco Curiel, DDS
6:30 pm – 8:00 pm	<i>Welcome Reception in the Exhibit Area for All Attendees</i>	

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### Welcome Reception

Join us from 6:30 – 8:00 pm as we kick off the IAA's 30th 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, June 2, 2016

### Scientific Session: Day 1

7:15 am - 8:00 am	<i>Light Breakfast for All Attendees</i>	
8:00 am - 8:05 am	President's Address	Marcelo Ferraz de Oliveira, DDS
8:05 am - 8:15 am	Welcome	Suzanne Verma, MAMS, CCA
	<b>Session Theme: Treatment Options in Facial Reconstruction</b> Session Moderators: Suzanne Verma, MAMS, CCA & Marcelo Ferraz de Oliveira, DDS	
8:15 am - 8:50 am	<b>KEYNOTE:</b> Complex Facial Reconstruction by Vascularized Composite Allo-transplantation: Synergy Between Surgeon, Anaplastologist and Clinical Engineer	Hubert Vermeersch, MD, PhD, Jan De Cubber, CDT & ir. Maarten Zandbergen
8:50 am - 9:20 am	<b>KEYNOTE:</b> The Other Face of Plastic Surgery: Working Together to Change the World One Life at a Time	P. Craig Hobar, MD
9:20 am - 9:40 am	Soft and Hard Tissue Foundation Reconstruction for Facial Prosthetics	Cesar A. Guerrero, DDS
9:40 am - 9:55 am	Achieving Successful Facial Prosthetic Rehabilitation Through Synergistic Collaboration	Julie Jordan Brown, MAMS, CCA
9:55 am - 10:20 am	Questions for Morning Session	
10:20 am - 10:50 am	<i>Coffee Break in Exhibit Area</i>	
10:50 am - 11:10 am	Clinical Spiritual Care and Human Dignity	Chaplain Carlos R. Bell, M.Div., MA
11:10 am - 11:25 am	Mesenchymal Stem Cells for Bone and Cartilage Regeneration	Roberto Fanganiello, B.Sc, PhD
11:25 am - 11:40 am	The Art and Science of Creating Life Masks for Cadaver Facial Studies	Gillian Duncan, MS, CMI, CCA
11:40 am - 11:55 am	Nosing Around: Exploring Traditional vs. Technological Approaches for a Nasal Prosthesis	Juan Garcia, MA, CCA
11:55 am - 12:10 pm	Challenges and Available Options in Facial Reconstruction	Anne-Marie Riedinger, CCA
12:10 pm - 12:35 pm	Panel Discussion of Morning Presenters	
12:35 pm - 2:00 pm	<i>Boxed Lunch &amp; Update on Billing Issues that Affect Providers in the United States (for those that wish to attend)</i>	
2:00 pm - 2:05 pm	Announcements	
	<b>Session Theme: Advances in Somato Prosthetic Reconstruction</b> Session Moderators: Jay McClennen, AOCA, CCA, CFm & Jiri Rosicky, ME, PhD, CPO	
2:05 pm - 2:35 pm	<b>KEYNOTE:</b> Osseointegration for Orthopedic Applications	Rickard Branemark, MD, PhD, MS
2:35 pm - 2:50 pm	The Link between Anaplastology and Orthopedics	Jan De Cubber, CDT
2:50 pm - 3:15 pm	<i>Coffee Break in Exhibit Area</i>	
3:15 pm - 3:30 pm	Applications of Silicones in Myoelectric Upper Extremity Prostheses	Chris Lake, CPO & David Worley
3:30 pm - 3:45 pm	Alternative Solutions to Partial Hand Prostheses	Andrew Etheridge
3:45 pm - 4:00 pm	Multidisciplinary Team Approach in Somato Prosthetic Rehabilitation	Jiri Rosicky, ME, PhD, CPO
4:00 pm - 4:15 pm	Techniques for Realistic and Durable Details in Facial Prostheses	Megan S. Thomas, MS, CCA
4:15 pm - 4:30 pm	Fundamentals of Silicone Foot Prostheses	David Robinson
4:30 pm - 5:00 pm	Questions and Closing Remarks	
5:00 pm - 5:30 pm	<i>Sponsor Exhibits and Posters Open for Viewing in Exhibit Area</i>	
5:00 pm - 6:00 pm	<i>IAA Board Meeting (Current Board)</i>	

## Friday, June 3, 2016

### Scientific Session: Day 2

7:30 am - 9:00 am	<i>IAA Business Meeting and Membership Breakfast - Members Only</i>	
7:30 am - 9:00 am	<i>Light Breakfast in the Exhibit Area for Non-Members</i>	
9:00 am - 9:05 am	Announcements	
	<b>Session Theme: Osseointegration and Implant Management</b> Session Moderators: Peter Evans, MIMPT & Yvonne Motzkus	
9:05 am - 9:35 am	<b>KEYNOTE:</b> Fixing Faces: WWI, Plastic Surgery, and the Modern Beauty Revolution	David Lubin, PhD
9:35 am - 10:05 am	A Retrospective on the Team Approach and Implant Therapy in Maxillofacial Prosthetics	Stephen Parel, DDS
10:05 am - 10:20 am	The Application of Dicom Data with Z-brush 3D Software How Can the Design and Fabrication of an Epithesis be Supported by it?	Yvonne Motzkus
10:20 am - 10:35 am	<i>Coffee Break in Exhibit Area</i>	
10:35 am - 10:50 am	Facial Epithesis: Implant Survival and Patient Satisfaction	Hubert Vermeersch, MD, PhD, Matthias Ureel, MD, Jan De Cubber, CDT & Nele Brusselsaers
10:50 am - 11:05 am	Immediate Reconstruction of Midfacial Defects After Ablative Surgery	Jacobus Van den Heever
11:05 am - 11:25 am	XRT, HBO, OI: What It All Means	David Reisberg, DDS
11:25 am - 11:40 am	Clinical Cross-Contamination	Paul Tanner, CCA & Christian Bartulovich
11:40 am - 11:55 am	Immediate Surgical Piercing for Nose Prosthesis Retention	Gaston Bernier, FADQ, DMD
11:55 am - 12:15 pm	Panel Discussion of Morning Presenters	
12:15 pm - 1:45 pm	<i>Lunch on Your Own</i>	
12:45 pm - 1:45 pm	<i>New IAA Board Meeting</i>	
1:45 pm - 1:50 pm	Announcements	
	<b>Session Theme: Team Approaches to Care and the Digital Thread</b> Session Moderators: Rosemary Seelaus, MAMS, CCA & Juan Garcia, MA, CCA	
1:50 pm - 2:15 pm	Maxillofacial Rehabilitation: The UIC Experience	Rosemary Seelaus, MAMS, CCA & David Reisberg, DDS
2:15 pm - 2:40 pm	Surgeon and Anaplastologist/Ocularist Team Approach in Case Management	Jorge Corona, MD & Randy Trawnik, BCO, FASO
2:40 pm - 3:05 pm	Craniofacial Implant Service - The Morriston Experience	Peter Evans, MIMPT
3:05 pm - 3:20 pm	<i>Coffee Break in Exhibit Area</i>	
3:20 pm - 3:35 pm	Lower Lid Laxity	Kuldeep Raizada, PhD, BCO, BADO, FAAO
3:35 pm - 3:50 pm	The Development of an Orbital Prosthesis Workflow Using Advanced Digital Technologies	Rose Perry
3:50 pm - 4:05 pm	Custom Ocular Prosthesis Fitting Following Evisceration: Staphyloma vs. Non-staphyloma Cases	Deepa Rani Diddi
4:05 pm - 4:20 pm	Clinical Application of Monoscopic Photogrammetry & Desktop 3D Printing in Facial Prosthetic Fabrication - The Affordable Alternative	Rodrigo Salazar Gamarra, DDS

**Friday, June 3, 2016** *continued ...*

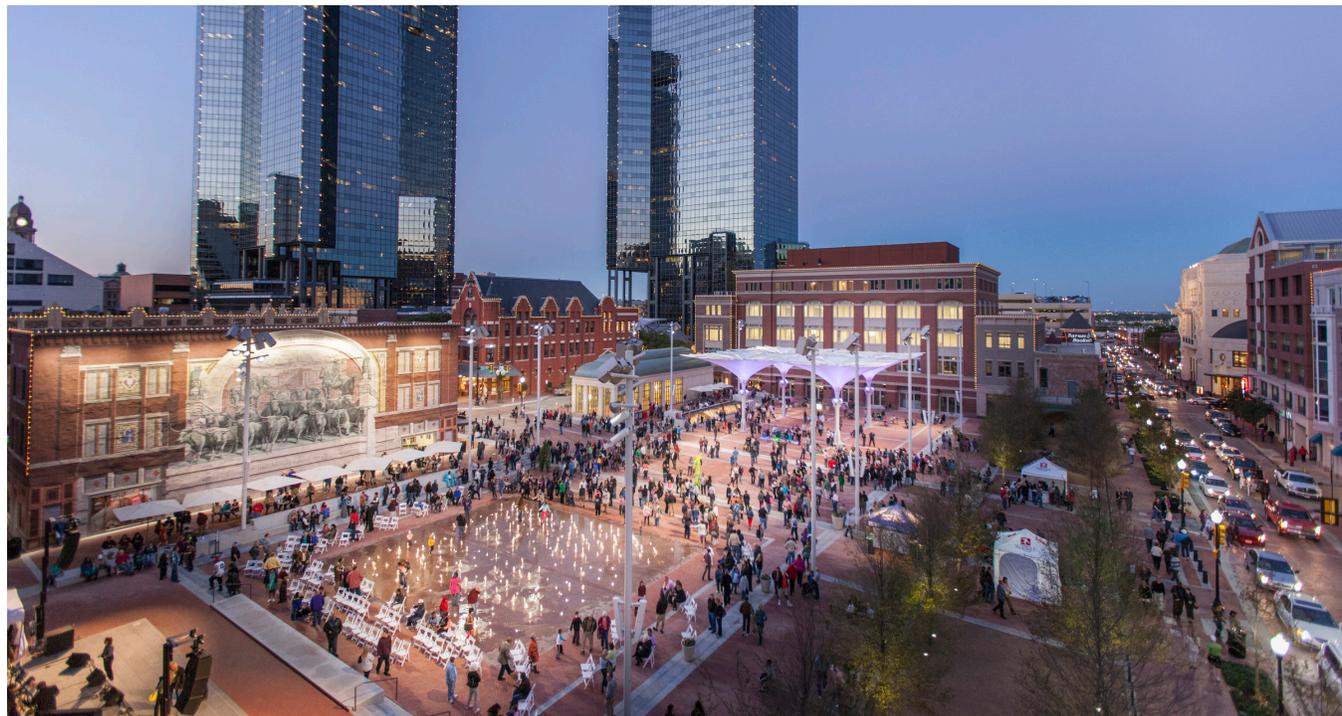
Scientific Session: Day 2

4:20 pm - 4:30 pm	Open Discussion & Questions
4:30 pm - 4:40 pm	Closing Remarks
5:30 pm - 9:00 pm	<p><b>Banquet at the Stockyards Hotel</b>                  Come join us for the Annual IAA Banquet held in the Historic Stockyards at the Stockyards Hotel. Come dressed in your best cowboy chic attire because everyone from Bonnie and Clyde to Elvis has passed through these parts! Even Billy Dean and Chuck Norris have made a stop! After the banquet enjoy all that the Stockyards have to offer and even take in a bull riding show or enjoy some two stepping at Billy Bob's Saloon down yonder.</p> <p><b>PLEASE NOTE: Departures will begin at 5:30 pm and a second departure will leave at 6:00 pm.</b></p>

**Saturday, June 4, 2016**

Post-Conference Course Programming

9:00 am - 12:00 pm	<p><b>Post-Conference Course</b>                  Experience and Explore the Digital Workflow in Virtual Surgical Planning and Prosthetic Reconstruction</p>	Katie Weimer, Jesse Knowles, Suzanne Verma, MAMS, CCA, Rosemary Seelaus, MAMS, CCA, Marianela Gonzalez, DDS, MD & Juan Garcia, MA, CCA
1:00 pm - 4:00 pm	<p><b>Post-Conference Course</b>                  An Update on Mold Making and Casting Techniques</p>	Mitch Rogers (Brick In The Yard Mold Making Supply) & Pattii Montgomery



# IAA Conference Program Abstracts

CONFERENCE PROGRAM: PRE-CONFERENCE COURSE

Wednesday, 9:00 am – 5:00 pm

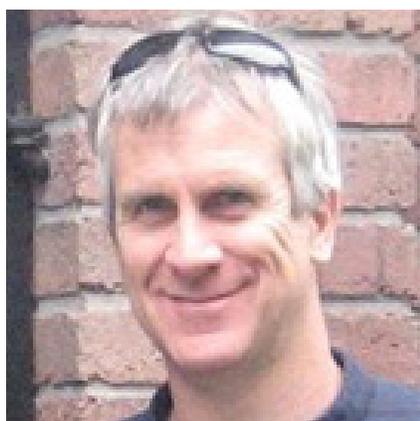


## Materials, Manipulation, Matching and Magnets Technovent and Factor II “Hands On” Technique Course

Presenters:

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

This one-day course covers the integration of the Technovent silicone elastomer and magnet retention systems, working from the chemistry behind silicone elastomers through the use of gels, packing of liquid silicone into the mold to the choice and integration of magnets into the final prosthesis. The course is aimed at those with some anaplastology knowledge who are unfamiliar with the Technovent system or who are interested in new developments. Lunch will be served.



### About the Presenters

**Peter Llewelyn Evans, MIMPT** 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 Maxillofacial Laboratory 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 the use of digital technology in Maxillofacial surgery and technology and in particular on the integration of digital technologies into facial prosthetics and 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) a founder member and secretary of the Centre for Applied Technology in Surgery (CARTIS) and Secretary to the Advanced Digital Technologies (ADT) Foundation.

**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: PRE-CONFERENCE COURSE

*Wednesday, 11:30 am – 1:30 pm*

## *Simply Bressanté Breast Prostheses*

Presenter

**Wendy A. Smith C.P. (c), CCA**

This workshop is designed to show how easy it can be to provide custom breast prostheses for clients in need. Bressanté breast prostheses are soft, lightweight and comfortable to wear. We have developed a simple system that enables the anaplastologist to measure/scan a client and send the data to us. We will create a beautiful breast prosthesis that will make any client feel and look great. The workshop will consist of a demonstration of our system and a variety of case studies will be discussed. Topics that will be covered include: Client Needs Assessment, Breast Prosthesis Fundamentals, Steps Involved: Data Acquisition to Finished Prosthesis, Reimbursement for Breast Prosthetics, Road to Recovery.

Attendees will hear from women who wear breast prostheses via short video and audio segments. Attendees will have the opportunity for hands on learning.

### **About the Presenter**

**Wendy A. Smith** is an honours graduate of the Clinical Methods in Prosthetics Program at George Brown College in Toronto, Canada. She interned at the Health Sciences Centre, Rehabilitation Engineering Department in Winnipeg and became certified in 1988. She worked as a Certified Prosthetist there until 1995, when she founded Lifeart Prosthetics Inc. Wendy is also a Certified Clinical Anaplastologist and is active in both the Prosthetics and Anaplastology fields.

Wendy provides a variety of custom body prosthetics with a focus on upper extremity and breast prostheses. In 2011 Wendy created a sister company, Bressanté Inc. which helps women deal with the effects of breast cancer and manage post-surgery body changes. She has designed a line of breast prostheses that are soft, lightweight and comfortable. Her goal is to make the functional and beautifully life-like prosthetics she designs accessible to clients regardless of their geographic location. Wendy is an artist who enjoys working in different mediums.

## CONFERENCE PROGRAM: PRE-CONFERENCE COURSE

*Wednesday, 2:00 pm – 3:00 pm**Ocular Fabrication*

## Presenters

**Louis Gilbert & Robert Robinson, BS, MSA, CCA**

This workshop is designed to provide attendees a thorough overview discussing various techniques to fabricate a custom ocular prosthesis. We will discuss two orbital defects (Enucleation and Evisceration); injuries that are common to military service members on the battle field which constitutes 85% of the patient base at Walter Reed. This lecture will provide a brief demonstration of the five steps involved in creating an ocular prosthesis.

This course will cover:

1. Impression taking/wax blank fitting;
2. Painting of the iris, setting the gaze;
3. Processing the sclera;
4. Tinting/veining of the sclera (Demonstration);
5. And, processing the clear cornea acrylic.

There will also be a discussion of a rarely used sixth step; this stage is for modification of the prosthesis.

**About the Presenters**

**Louis Gilbert** was born and raised in Nashville, Tennessee. He is a 20-year Veteran of the United States Navy with 22 years of combined Laboratory Prosthetics experience. He is a graduate of the Naval School of Health Sciences

Dental Laboratory Technician Program in 1994, and he is a 2000 graduate of the Naval Postgraduate Dental School, Maxillofacial Laboratory Technician Program, in Bethesda, Maryland.

Louis served as staff Anaplastologist at the Maxillofacial Prosthetics Department at the Naval Medical Center, Portsmouth, Virginia from 2000-2006. He is currently serving as the only Anaplastologist employed by the Department of the Defense at the Walter Reed National Military Medical Center (WRNMMC).

In 2006, realizing that our main patient base were prime candidates for some of the signature injuries of the US war in Afghanistan and Iraq, Louis established and currently operated the Ocular Restoration Clinic in support of the Global War on Terrorism. With total responsibility for the fabricating and fitting of all ocular restorations including shell, reform, and modified, stock and cosmetic shells.

Louis' primary patient base consists of Active Duty, Retired and disable military personnel and all eligible beneficiaries. Additionally, he provides clinical and advanced laboratory and technical support in the fabrication of conventional, non-conventional, simple, complex, intra- and extra-oral prosthetic and radiation appliances for numerous departments within the Naval Hospital and the Dental Directorate.

**Robert Robinson** is a Clinical Anaplastologist/Dental Maxillofacial Prosthetist for Langley Air Force 633rd Medical Group in Hampton, VA. He's also is a consultant to dentist and allied health professionals on the designing and fabrication of complex intra and extra -oral prosthetic appliances.

From 2009 to 2016 He was a Clinical Anaplastologist for Walter Reed National Military Medical Center Bethesda, MD and until his retirement from military service in 2008 Robert was the Chief Anaplastologist on staff at the Naval Medical Center, Portsmouth, VA. Prior to that; he was one of two Maxillofacial Prosthetist/Anaplastologist instructor for the Naval Post-graduate Dental School Bethesda, MD. Serving as an educator; he was involved in numerous projects including a self-study assignment rewriting the programs' core curriculum that subsequently became the first Clinical Anaplastologist/ Maxillofacial Laboratory prosthetics program approved for accreditation by the Bureau of Medicine and Surgery, Washington, D.C. From 1996 to 1998 he was the dental laboratory prosthetics manager for Naval Post Graduate Dental School Bethesda, MD and dental removable Prosthetics section leader for Naval Dental Center Pearl Harbor, HI.

Robert earned his Bachelor's of Science degree in Healthcare Management from Southern Illinois University and a Master of Science in Health Services Administration from Central Michigan University. He received his specialty training in dental laboratory prosthetics from the Naval School of Dental Assisting and Technology, San Diego, CA and Anaplastology/ Maxillofacial Laboratory Prosthetics from the Naval Post-graduate Dental School and Naval School of Health Sciences, Bethesda, MD.

Robert is a Past President for International Anaplastology Association and Past Treasurer for the Board for Certification in Clinical Anaplastology (BCCA). He is a current Director for the (BCCA) and a sitting member on the Anaplastology association Future Sites sub-committee.





## *Digital Bar Design for Milled Superstructures*

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Presenter

**Bernard Robichaud**

Discover how digital workflow and technology can be used for difficult and challenging cases of anaplastology. Learn about all the different types of implant bars and attachment systems for the treatment of your patients according to their particular needs. See some unique solutions that can change the way you do your work. With over 50 000 cases done, Panthera Dental draws on its experience and will answer all your questions about implant bars as part of this lecture.

### **About the Presenter**

**Bernard Robichaud** is the co-founder of Panthera Dental, a lecturer, and a Specialist in High Technology CAD/CAM Dental Products. He graduated in Telecommunications at Collège radio télévision de Québec (CRTQ). During his career, he led several lectures in English and French in 10 different countries and trained over 400 dental specialists in the CAD/CAM dental field.

## CONFERENCE PROGRAM: PRE-CONFERENCE COURSE

*Wednesday, 4:20 pm – 5:20 pm*

## *Clinical Photography Workshop*

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Presenter

**Francisco Curiel Aguilera, DDS**

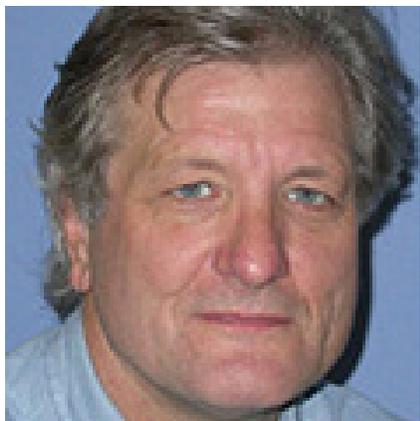
The purpose of this workshop is to learn the basis for clinical photography as it applies to facial prosthetics, including standardized portrait photography, artistic portrait photography and close-up photography of anatomy and components.

### **About the Presenter**

**Dr. Francisco Curiel** is a resident in the Graduate Periodontics Program at Texas A&M University, Baylor College of Dentistry.

He received his D.D.S. degree at DeLaSalle University in León, Mexico, and he completed the Graduate Prosthodontics Program at Universidad Intercontinental in Mexico City. He received advanced training in bone anchored solutions as an Implant Fellow with the Center for Maxillofacial Prosthodontics, Texas A&M University, Baylor College of Dentistry.

His research interest, on which he has lectured nationally and internationally, include: Computer-guided dental-implants surgery, dental implants temporization and restoration, peri-implant soft tissue management, treatment of the full edentulous patient, dental ceramics and laminate veneers and clinical photography.



## KEYNOTE

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

## Presenters

**Hubert Vermeersch, MD, PhD, Jan De Cubber, CDT, Anaplastologist & ir. Maarten Zandbergen**



*Intro:* 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 neighboring 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.

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 exten-

sive 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.

Since no precedents were known, we also developed a graft transport medium.

After the facial transplantation was completed, an ocular and 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 to 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

**Jan De Cubber** was trained as a CDT and Maxillofacial Prosthesis at the University of Brussels in 1987, he 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, 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.

He was the President of the International Anaplastology Association in 2012 and he's 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.

In 2015-2016, he developed the Click-on upper-limb technology, liner limb technology and the "Nose" software.

**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).

**Ir. Maarten Zandbergen** Contact Maarten Zandbergen at [Maarten.Zandbergen@materialise.com](mailto:Maarten.Zandbergen@materialise.com)

## CONFERENCE PROGRAM: GENERAL SESSION

*Thursday, 8:50 am – 9:20 am*

## KEYNOTE

*The Other Face of Plastic Surgery: Working Together to Change the World One Life at a Time*

Presenter

**P. Craig Hobar, MD**

Dr. P. Craig Hobar has decades of experience in helping to improve the quality of lives of children with the most complex craniofacial abnormalities. Through humanitarian efforts of almost 25 years as Founder and Medical Director of LEAP Global Missions, thousands of children living in the most remote areas of the world have received free medical and surgical care via a collaborative effort of exceptional medical volunteers willing to serve in the most austere of

environments. Dr. Hobar will provide a different view of patient care under the most challenging of circumstances found only in the medical mission field.

**About the Presenter**

**Dr. Craig Hobar** currently practices in Dallas and Austin. He is the Founder and Medical Director of LEAP Global Missions, which celebrates its 25th anniversary in the coming year. LEAP provides free specialized medical and surgical services to children living in remote, poverty-stricken areas who would otherwise have no access to care through their three programs of service: Mission Program, which sends volunteer surgical teams to provide free specialized surgical care in Belize, India, Haiti (bi-annually), Dominican Republic, and Zimbabwe; Landmark Program, which provides the opportunity for difficult cases to be brought to the U.S. for reconstructive surgery; and International Disaster Relief Program, which currently partners with the International Society of Aesthetic Plastic Surgery (ISAPS) to form ISAPS-LEAP Surgical Relief Teams, a global resource that can quickly deploy highly-skilled plastic and reconstructive surgeons to areas hit by natural or man-made disasters. LEAP has helped over 9,000 children from 21 countries receive much needed medical and surgical care. To learn more, visit LEAP's website at [leapmissions.org](http://leapmissions.org).

## CONFERENCE PROGRAM: GENERAL SESSION

*Thursday, 9:20 am – 9:40 am*

## *Soft and Hard Tissue Foundation Reconstruction for Facial Prosthetics*

Presenter

**Cesar A. Guerrero, DDS**

Final fabrication and positioning of facial prosthesis anchored on osseointegrated implants depends on soft and hard tissue harmonious framework.

Prosthetic ideal esthetics and natural beauty requires a healthy and cosmetic foundation. Oral and Maxillofacial and Plastic Surgeons have the possibility to change the skeletal disharmonies, increasing the bone size either through osteotomies or distraction osteogenesis; however many clinical situations would indicate altering or reducing the bone framework by resection or osteotomies.

Soft tissues can also be augmented or reduced according to every individual needs.

Most of the times, hard bone surgery and extraoral implants insertion are performed simultaneously to decrease treatment time and costs, exposing the extraoral fixtures and performing the soft tissue surgery in that second surgical stage.

Different variables are taken into consideration when planning the final treatment, age of the patient, type of deformity, excess or tissue deficiency, co-morbidities, personal hygiene and psycho-social status.

New technologies in imaging, prediction, tele-navigation, cone-beam scan and mirroring help the anaplastologist and surgeon to be predictable and measure in detail the need for reduction or augmentation to obtain an ideal symmetry in the foundation to insert the fixtures and anchor the facial prosthesis.

### **About the Presenter**

**Cesar Guerrero, DDS** is an Assistant Professor in the Division of Oral and Maxillofacial Surgery, Department of Surgery, at the University of Texas Medical Branch Galveston. His specialties include severe craniofacial malformations, facial reconstruction, cleft lip and palate, zygoma or extraoral implants, distraction osteogenesis, orthognathic surgery and more.

His contributions to ACOMS have been significant as a former ACOMS Regent, frequent lecturer, and advocate for the organization. He is also a Past President of ALACIBU and NORCIBU, former Director of the IAOMS, and a member of numerous national and international oral and maxillofacial surgical organizations.

Dr. Guerrero attended dental school at the Central University of Venezuela and completed his residency in oral and maxillofacial surgery at University of Texas Southwestern/Parkland Memorial Hospital in 1981. Dedicated 25 years as a part time teacher in the orthodontics department at the Central University of Venezuela. An avid researcher and prolific writer, he is the author of 27 book chapters and 85 scientific articles and serves as a reviewer for OOOO, JOMS, and the IJOMS.

The 2016 W. Harry Archer Award will be Awarded to Cesar Guerrero, DDS. Dr. Guerrero will present the Kurt H. Thoma Memorial Lecture, Inventions and Innovations in Maxillofacial Reconstruction During Growth on Tuesday, April 12, 2016.



## *Achieving Successful Facial Prosthetic Rehabilitation Through Synergistic Collaboration*

Presenter

**Julie Jordan Brown, MAMS, CCA**

Co-Author

**Megan S. Thomas, MS, CCA** (*Biography available on page 31.*)

When a patient presents with a complex facial deformity providing successful prosthetic rehabilitation requires significant artistic judgment, technical skills and clinical collaboration. The relationship of the patient to the clinical anaplastologist is the beginning of the synergy necessary to achieve successful prosthetic

rehabilitation. A patient who is actively engaged in her treatment plan will more successfully adapt to the challenges of wearing a facial prosthesis. The anaplastologist can enhance the patient's experience through clear communication about the process required for prosthetic design, implant placement and prosthetic fabrication. Successful prosthetic rehabilitation is achieved when the patient wears the prosthesis with comfort and confidence and is able to return to daily activities.

However the clinical anaplastologist uses more specific criteria to define a successful facial prosthesis:

- The prosthesis is inconspicuous:
  - The sculptural form creates a natural symmetrical appearance.
  - The color and texture simulate a lifelike appearance.
- The prosthesis is secure and comfortable.
- The prosthesis is designed and fabricated to minimize health and safety risks to the patient.
- The prosthesis can be applied and removed with relative ease
- The prosthesis is designed for durability.
- The prosthesis uses appropriate cosmetic or health grade materials.

Many of these criteria can be managed by the anaplastologist, but others are dependent on synergistic collaboration with surgeons and other team members. Three cases will be discussed with outcomes that relied on synergistic collaboration. A deliberate design process that identifies and guides the key decisions related to aesthetic design and surgical planning for implant placement will be described. Understanding the needs of the patient as well as the skills and experience of each surgeon is crucial to providing the support required to optimize soft tissue management and implant placement.

### **About the Presenter**

**Julie Jordan Brown** has built a successful private practice over the past 28 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. She earned her BS and MAMS degree from the University of Illinois at Chicago in biomedical visualization and is a certified clinical anaplastologist. Julie currently serves as president of the Board for Certification in Clinical Anaplastology. Recently she co-authored an article entitled Osseointegrated implants for orbito-facial prostheses: Preoperative planning tips and intraoperative pearls, in the journal Orbit. Julie believes that the benefits of professional collaboration in this small field are key to improvements in patient care.



## *Clinical Spiritual Care and Human Dignity*

Presenter

**Chaplain Carlos R. Bell, M.Div., MA**

Spirituality is a re-formation of the human soul and focuses on relationship and not religious dogma, i.e. doctrine, religious history, or religious rules. God, Supreme Being, or Higher Power exists as a communal being, and since human beings are made in the image of a relational God, Supreme Being, or Higher Power, they function best when they are in the right relationship with their deity and others. The psychosocial and spiritual healing is a very important aspect for our patients who have acquired facial and/or bodily deformities due to trauma, cancer, or were born with a malformation. Medical science at times ignores the human dignity and self-worth of an individual by ignoring the human

soul. Patients are at times dehumanized by being treated as a case study. Connecting with human beings is fundamental to restoring the sense of a person's worth, understanding them beyond medical knowledge and skill set. Engaging in the patients' narrative and search for meaning is a spiritual process. Patients are made in the image of a communal deity, have inherent worth and value, and their humanity must be respected regardless of their malformations. Anaplastology is at the heart of spirituality and health by creating questions of meaning, purpose, and healing. For example: "Why do good people have to suffer?" "God, are you there?" "Will this surgery allow me to be normal?" "How will I look after surgery?" The cutting-edge approach of Anaplastology is to holistically treat the body and human soul by being-with the patient and attending to their comprehensive storyline.

### **About the Presenter**

**Chaplain Carlos R. Bell** is Director of Pastoral Education at Baylor Scott & White Health. He has been with Baylor for over 19 years. His administrative responsibilities at Baylor include directing one of the largest Clinical Pastoral Education (CPE) programs in the country. Baylor has trained over 1,000 CPE students from 19 denominations and 5 continents around the world. The CPE faculty trained a total of 48 stipend CPE residents and interns representing a combined total of 24,000 hours of educational training and 80,000 patient/family/staff visits in FY15. He was selected as one of the top 12 supervisory education student spiritual educators by the Association for Clinical Pastoral Education (ACPE), 1996 National Veterans Affairs Chaplain of the Year, A Southwestern Baptist Theological Seminary Black Distinguished Alumni for accomplishments in spiritual education, and currently the 27th President of the International ACPE serving as only the third person of color in this role.



## *Mesenchymal Stem Cells for Bone and Cartilage Regeneration*

Presenter

**Roberto Fanganiello, B.Sc, PhD**

Resident pools of mesenchymal stem cells (MSCs), mainly derived from the endosteum, the periosteum and the bone marrow cavity, play important roles during the process of fracture repair, by undergoing differentiation to become bone-forming osteoblasts, as well as cartilage-forming chondrocytes and by exerting paracrine and immunomodulatory effects in the regeneration site. Bone and cartilage tissue engineering seeks to use these cells, either by activating host's MSCs or by transplanting them from an exogenous source, in association with biomaterial scaffolds and bioactive signals, to create functional tissue.

MSC-based therapies for bone and cartilage regeneration is being actively pursued and show great potential clinical promise. Even though different tissue trophic or immunomodulatory effects have been reported associated with MSCs, their therapeutic effectiveness is still being investigated. Several factors can considerably affect bone and cartilage formation outcomes and need to be carefully evaluated and optimized before the use of MSCs is thoroughly translated to clinical scenarios. In this presentation some of these main factors will be discussed, such as MSCs' subtypes and heterogeneity as well as the ways MSCs are isolated, expanded, manipulated and implanted.

### About the Presenter

#### **Postdoctoral training in Stem Cells Biology and Regenerative Medicine: 2010 - 2016**

Main Project: Molecular markers to select adult stem cells with higher osteogenic potential for cell therapy

Ancillary project: Adult mesenchymal stem cells association with biomaterials for bone regenerative medicine.

Department of Genetics and Evolution, Institute of Biosciences, University of Sao Paulo, Sao Paulo, Brazil. Grant Agency: Brazilian Ministry of Health (Federal Government)

#### **Ph.D. in Molecular Genetics: 2010**

Thesis: Gene expression profile and cellular behavior in cells from craniosynostosis' patients Department of Genetics and Evolution, Institute of Biosciences, University of Sao Paulo, Sao Paulo, Brazil.

Grant Agency: Sao Paulo Research Foundation (FAPESP)

#### **Visiting scholar: 2008 - 2009**

Department of Orthopaedics and Rehabilitation, School of Medicine, Yale University, New Haven, Connecticut, USA.

#### **Bachelor's degree in Biology - BsC (emphasis in Genetics and Molecular Biology): 2004**

Dissertation: Molecular study of the gene TCOF1 in patients with Treacher-Collins syndrome

Institute of Biosciences, University of Sao Paulo, Sao Paulo, Brazil

Grant Agency: Sao Paulo Research Foundation (FAPESP)

## CONFERENCE PROGRAM: GENERAL SESSION

Thursday, 11:25 am – 11:40 am



## *The Art and Science of Creating Life Masks for Cadaver Facial Studies*

Presenter

**Gillian Duncan, MS, CMI, CCA**

Co-Author

**Michaela Calhoun, MS, CCA**

This is a presentation about the art and science of creating life masks for cadaver facial studies in preparation for creating a life mask for the face transplant donor patient. As the frontier of face transplants develops, more anaplastologists are being asked to lend their skills in recreating anatomy to create the “gift of life mask” for the facial donor’s family. Gillian F. Duncan and Michaela Calhoun,

certified clinical anaplastologists have developed their own process for creating a life mask.

The goal of the life mask is to restore the appearance, form and symmetry of the donor’s face - naturally and realistically. This presentation shows, step-by-step, how our unique process, beginning with the impression and ending with the final fitting on the cadaver produces excellent results and can be executed quickly and efficiently in the hospital without special equipment.

The role of the anaplastologist on the facial transplant team is creating the most life-like mask or representation of the donor possible. Since the very first practice face transplant, we have strived to create a technical and artistic process that can be taught and replicated by others with a background in art and science. We believe that creating a life mask honors the dignity of the donor and is a way of thanking the family.

### About the Presenters

**Gillian Duncan** has a dual career and certifications in medical illustration and clinical anaplastology. For over 30 years, Gillian has used her knowledge of surgery, anatomy and pathology to create medical and scientific images and fit life-like prostheses for patients missing part of their face. Her ability to combine art, science, medicine and technology lead her to establish Graphica Medica Institute for Medical Illustrations and Facial Prostheses in Homburg Germany. In 1991 she moved Graphica Medica, LLC to Rochester, Minnesota. Presently, Gillian trains interns in craniofacial prosthetics and provides facial and somatic prostheses for patients -nationally and internationally.

**Michaela Calhoun, MS, CCA** is a certified clinical anaplastologist living and working in the Twin Cities area of Minnesota. After earning a Bachelor of Fine Arts and a Master of Science degree in Biomedical Visualization at the University of Illinois at Chicago, she moved back to her native upper Midwest and joined the team at Prosthetics at Graphica Medica, LLC in January 2011. Michaela is also the current Chair of the Walter Spohn Educational Fund (WSEF) Committee, a group that administers grants and supports educational research in the field of prosthetic rehabilitation. Through her work as a clinical anaplastologist and in her capacity as a member of the WSEF, she hopes to continue her support of high quality clinical care and scientific research in the field of anaplastology.



## *Nosing Around: Exploring Traditional vs. Technological Approaches for a Nasal Prosthesis*

Presenter

**Juan Garcia, MA, CCA**

A case study is used to highlight lessons learned from applying various traditional and advanced technology techniques during the treatment of a patient requiring an adhesive retained nasal prosthesis. The physician and patient requested a quickly made temporary prosthesis to help support the remaining tissue during radiation oncology treatment immediately following cancer surgery. After healing occurred, the patient requested a nasal prosthesis be produced using the latest in advanced 3D printing technologies. The presentation will demonstrate various steps taken to explore implementation of a digital workflow resulting in a custom adhesive retained silicone prosthesis for the patient.

### **About the Presenter**

**Mr. Juan R Garcia** is a Certified Clinical Anaplastologist (CCA) serving as the Director of the Johns Hopkins University Facial Prosthetics Clinic. He is also an Associate Professor in the Department of Art as Applied to Medicine in the Johns Hopkins University School of Medicine. He leads the program in Supervised Training in Clinical Anaplastology as well as teaches in the medical illustration graduate degree program. Juan graduated with an MA degree in Medical & Biological Illustration from Johns Hopkins. His clinical anaplastology training experience included several technical exchanges at Columbia University/Bronx VA, Toronto-Sunnybrook Cancer Center, Sahlgrenska Univ. Hospital, Kings College London (in Pune India) as well as with respected colleagues Gillian Duncan, Fred Harwin, and Barbara Spohn-Lillo. Juan currently serves as the Vice President of the Board for Certification in Clinical Anaplastology (BCCA), having led the Job Task Analysis leading to the development of the credential. He is a past president of the International Anaplastology Association (2002-3). This oral presentation will touch upon many of his research interests which include the use of advanced technologies such as surface scanning, DICOM reconstructions, 3D sculpting, and 3D printing.

## CONFERENCE PROGRAM: GENERAL SESSION

Thursday, 11:55 am – 12:10 pm



## *Challenges and Available Options in Facial Reconstruction*

Presenter

**Anne-Marie Riedinger, CCA**

As clinical anaplastologists, we often have to deal with compromised cases such as large defects, restricted retention options, painful or tender spots, active mobility, space issues, assymetry, patient's poor ability to manipulate the prosthesis, poor hygiene or unrealistic patient's expectations. In these challenging cases how to design a facial prosthesis with the patient's medical/surgical options, allowing a safe anchorage, comfort and ease of use in order to bring the patient's identity and dignity back and allow him to face his family and the world and continue to live as best as possible? In our 30 years of experience, we tried out different options

with adhesives, self retention, surgical collaboration and bone anchored prostheses, the use of mixed silicones and resins, and new technology. Nevertheless, anaplastology is hence the field of designing creative ways to solve problems. Thus, I realized that each case is a new challenge. What worked well for one patient is not always appropriate for another one. So we treated complex cases with alternative rehabilitation methods using internal well designed acrylic supports and magnetic retentions. Conclusion: Surgery and team collaboration are critical in prosthetic outcome and mixed materials, up to date techniques, 3D technologies as well as the design challenges of multiple parts were necessary to achieve a safe, functional and aesthetic prosthetic rehabilitation for those challenging cases.

### **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 Haute Ecole des Arts du Rhin (former ESADS) in 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'Epitheses 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. Her areas of interest are bone anchored prostheses, research, teaching and transmitting skills and knowledge.



## *Osseointegration for Orthopedic Applications*

Presenter

**Rickard Brånemark, MD, PhD, MS**

Amputation prostheses have been used for many centuries, but are still far away from restoring the real limb. Adequate attachment of the prosthesis is one major problem. Osseointegration is a novel approach to address attachment problems. Another problem is movement control of the prosthesis. A bottleneck has been to find a solution to record appropriate physiological signals inside the body and transfer the signals to the external components in a reliable way. In order to overcome these problems, a stable anchorage of the prosthesis has been developed using osseointegration and a permanent bidirectional interface into the human body, the Osseointegrated Human-Machine Gateway (OHMG).

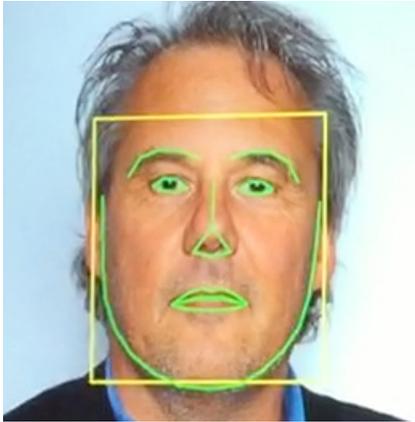
This presentation will give an overview of the development of osseointegrated amputation prostheses during the last 20 years and the recent development of the OHMG.

### About the Presenter

**Rickard Brånemark** is a visiting Associate Professor, Department of Orthopaedic Surgery, Co-Director International Center for Osseointegration Research Education and Surgery (iCORES) at the University of California San Francisco, School of Medicine in San Francisco, CA and an orthopedic surgeon at the Centre for Advanced Reconstruction of Extremities (C.A.R.E.) at Sahlgrenska Univeristy Hospital. He is also Associate Professor at the Department of Orthopedics at the University of Gothenburg. Dr. Brånemark has been conducting research in the osseointegration field in orthopedics that was initiated by his father Per-Ingvar Brånemark in the early 90's who developed the treatment with bone anchored prostheses in humans. He has been involved in studies on titanium implants to anchor limb prostheses for more than 20 years and has completed more than 250 surgeries worldwide. Since 1999, he has been responsible for introducing orthopedic osseointegration for amputees in clinics in England, Australia, Hungary, Spain, France, Chile, Denmark, Belgium, Holland, Portugal, Jordan and USA. He is actively involved in research with amputees and osseointegrated limb prostheses, collaborating with several international groups of his research interests which include the use of advanced technologies such as surface scanning, DICOM reconstructions, 3D sculpting, and 3D printing.

## CONFERENCE PROGRAM: GENERAL SESSION

Thursday, 2:35 pm – 2:50 pm



## *The Link between Anaplastology and Orthopedics*

Presenter

**Jan De Cubber, CDT, Anaplastologist**

Nowadays, a prosthesis is no longer seen as a taboo or stigma to its wearer. In our current society showing the prosthesis is considered fashionable.

We reinvented the upper limb prosthesis, as a synergy of both anaplastology and orthopedic technologies. The combination of state of the art CAD-CAM technology and silicone technology this project resulted in:

- The concept of the upper limb prostheses
- The modular composition
- The configuration approach (configuration box)
- The new liner concept
- New silicone liner material
- New liner retention system (magnet system)
- Production techniques (3-d design/printing)
- Introduction of an intelligent socket with integrated magnets
- Connective possibilities for tools
- Transfer system for digitizing an upper limb prosthesis

### About the Presenter

**Jan De Cubber** was trained as a CDT and Maxillofacial Prothesist at the University of Brussels in 1987, he 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, 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.

He was the President of the International Anaplastology Association in 2012 and he’s 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.

In 2015-2016, he developed the Click-on upper-limb technology, liner limb technology and the “Nose” software.



## *Applications of Silicones in Myoelectric Upper-Limb Prostheses*

Presenters

**Chris Lake, CPO & David Worley**

Upper-limb prosthetic patients present with a variety of needs. On one side of the spectrum, these can be related to the trauma or anomaly resulting in the need for prosthetic replacement. For these patients there may be a significant emphasis placed on protection of a fragile residual limb. On the other side of the spectrum, specific activities and/or work-related tasks that the patient desires to accomplish warrant highly customized prosthetic socket interfaces. Of all the materials available to the upper limb prosthetist and technician, no other material has the versatility in application as does silicone.

The purpose of this paper is to discuss the two specific silicone application techniques used in the upper-limb prosthetic specialty practice. The first application technique involves the construction of air bladders for enhanced suspension, ease of donning, and increased residual limb stability. The second application technique involves the blending of a low density/durometer room temperature cured silicone with high density/durometer vulcanized silicone to provide patient specific variation in the coefficient of friction, structural integrity, elasticity, and flexibility of the prosthetic application.

The clinical applications of these techniques will be exemplified in a variety of patient cases. These cases will include levels of amputation ranging from partial hand to transhumeral as well as incorporate varied residual limb presentations from those that are heavily scarred to those with heterotopic ossification.

### **About the Presenter**

**Chris Lake, L/CPO, FAAOP(D)** is the Clinical Director of Lake Prosthetics and Research and has specialized in upper limb prosthetics since 1995. He is a fellow of the American Academy of Orthotists and Prosthetists and the immediate Past-Chair of the Upper Limb Prosthetics Society. Recently he was awarded the Academy's Fellow with Distinction designation for his contributions to the O&P field through leadership, publication, and presentation of concepts and research at national and international conferences.

Chris has published in the Journal of Prosthetics and Orthotics, Medical Engineering and Physics, Physical Medicine and Rehabilitation - Clinics of North America, as well as the current and forthcoming The Atlas of Amputations and Limb Deficiencies.

In addition to his clinical practice, Chris actively serves in roles from clinical consultant to co-investigator in multiple DARPA, SBIR, and NIH funded upper limb prosthetics research projects.

## CONFERENCE PROGRAM: GENERAL SESSION

*Thursday, 3:30 pm – 3:45 pm**Alternative Solutions to Partial Hand Prostheses*

Presenter

**Andrew Etheridge**

One important role of the Anaplastologist is to give a patient the ability to once again feel a sense of normalcy. In some of the more challenging cases we do this by thinking outside the box in order to provide a patient with the best non-invasive treatment options we can conceive. Options for prosthetic treatment of partial hands has mainly been to create an aesthetic passive device. As the Anaplastologist works towards the goal of aesthetic normalcy, function should be as important as the aesthetics and the challenge is in the merging of the two. This presentation will highlight specific case studies with the corresponding processes for prosthetic reconstruction. Processes and materials for fabrication will be discussed, retention methods analyzed, and orthopedic results shown alongside patient testimonials.

**About the Presenter**

**Andrew Etheridge** received a Bachelors of Fine Arts from the University of North Carolina at Wilmington. From there he continued his studies in the arts by completing a Masters of Fine Arts from the University of North Carolina at Greensboro. Andrew continues to advance his artistic career by exhibiting his sculptural works in the gallery setting. He was first introduced to the world of Anaplastology when he came upon Jay McClennen's name while researching the body's role in art, science, and special effects. His interest in the body and health caused him to seek employment in the field of prosthetics and orthotics. Andrew spent a few years as a prosthetic assistant and Lead Prosthetic Technician at Del Bianco Prosthetics and Orthotics before finally joining The Anaplastology Clinic. Andrew has had the honor of working under Jay McClennen's lead during the last four years. Andrew specializes in maxillofacial and somatic.



## *Multidisciplinary Team Approach in Somato Prosthetic Rehabilitation*

Presenter

**Jiri Rosicky, ME, PhD, CPO**

Co-Authors

**Ales Grygar, Tomas Bouma, Petr Chapcak, Mario Paravan & Martin Paciorek**

**Purpose:** Multidisciplinary team approach (MDT) is very important in our special field. The application of MDT approach results in improvement of comfort, function and cosmetic appearance 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 benefits of MDT approach in somato prosthetic rehabilitation.

**Materials and Methods:** Medical necessity of somato prostheses Medical necessity and basic clinical requirements (comfort, function, appearance) on silicone upper limb and lower limb prostheses will be discussed.

**Multidisciplinary Team Approach:** MDT approach represents the application of medical, technical & artistic skills and experiences. The role of team members and the benefit of MDT approach will be described.

**Application of Digital Technology:** The application of digital technology is contributing to improvement of clinical and technical processes in prosthetic rehabilitation. We can use digital technology for assessment, surgical planning, design & manufacturing and evaluation of clinical outcomes in somato prosthetic rehabilitation.

**Results:** We will demonstrate some clinical cases of patients with silicone upper and lower limb prostheses where MDT approach was applied.

**Conclusions:** MDT approach brings benefit to a patient, especially if the solution requires cooperation of different medical, technical and artistic professionals.

### About the Presenter

**Jiri Rosicky**, CEO at Invent Medical Group, CEO and R&D Manager at ING corporation, CEO at Ortopedicka protetika Frydek-Mistek, is a Registered Prosthetist & Orthotist. Jiri has worked in the field of P&O since 1993. He was active in P&O education as an Assistant Professor at the University of Ostrava from 2006 till 2011. His professional focus is on application of digital technologies in P&O (3D scanning, CT/MRI data processing, computational modeling, CNC milling, 3D printing). Jiri earned a master's degree at mechanical engineering and holds a mechanical engineering science PhD from the Brno University of Technology. He is a member of IAA and the ISPO.

## CONFERENCE PROGRAM: GENERAL SESSION

*Thursday, 4:00 pm – 4:15 pm*

## *Techniques for Realistic and Durable Details in Facial*

Presenter

**Megan S. Thomas, MS, CCA**

Co-Author

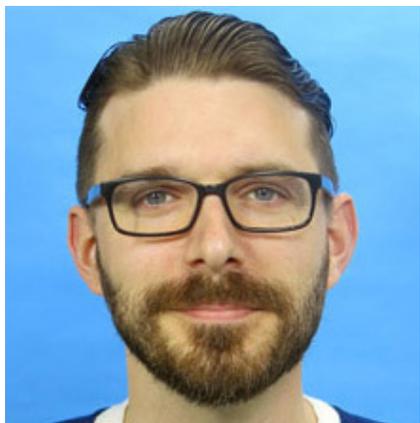
**Julie Jordan Brown, MAMS, CCA** (*Biography available on page 20.*)

As anaplastologists, we do our best to restore our patients' missing anatomy with lifelike prostheses. While anatomical form, fit, coloring, and secure retention are fundamental to a successful prosthesis, it is the tiny details that capture each patient's individuality. Features such as carefully styled or unruly eyebrows, full eyelashes, piercings, or distinctive freckling or veining characterize the appearance of many patients. Successfully reproducing those unique details can make the difference between a satisfactory prosthesis and one that is accepted as part of the patient and worn with confidence.

While new technologies provide assistance for many of our processes, these small, artful details that elevate a prosthesis are still done by hand and are a crucial part of our unique skill set as anaplastologists. It can be a challenge to replicate these delicate features so that they are not only natural looking, but also durable enough for patients to successfully manage long-term. This presentation will not be a survey of patient cases. Rather, it will provide detailed instructions and tips, along with information about materials, so that attendees will be able to reproduce similar results in their own practices through both extrinsic and intrinsic application methods. The presentation will focus on eyebrows, eyelashes, facial hair, typical and gauged piercings, and cosmetics.

### **About the Presenter**

**Megan Thomas, MS, CCA**, received an M.S. in Biomedical Visualization with an anaplastology concentration from University of Illinois at Chicago in 2009. She joined Julie Jordan Brown, MAMS, CCA at Medical Art Resources in Milwaukee, Wisconsin in 2010. Megan serves as the Treasurer/Secretary of the IAA's Walter Spohn Educational Fund Committee and co-chairs the Otoart Fundraising Initiative committee for the WSEF. As a Certified Clinical Anaplastologist, Megan looks forward to collaborating with other clinicians to share and develop best practices through the integration of new materials and techniques.



## *Fundamentals of Silicone Foot Prostheses*

Presenter

**David Robinson**

Options for prosthetic treatment are available for virtually every level of foot amputation. Some are more complex than others. While achieving optimal aesthetic normalcy is an important goal, the anaplastologist's approach to prosthetic treatment for the various levels of foot amputation should also include consideration of the patient's orthopedic needs. Lack of consideration to these needs can be detrimental to the residual limb. With the term "weight-bearing", a defining boundary between anaplastology and orthopedics has been established. Although this boundary is intended to maintain appropriate quality of care in their respective scopes of practice, it can also serve as a limiting factor. In the

orthopedic industry, standards of care in the prosthetic treatment of foot amputations typically involve devices that are meant to be worn inside a shoe. These devices are often made from materials other than silicone, including thermoformed cushioning foams of varying densities, as well as thermoformed rigid and semi-rigid plastics. Such devices are tried and true methods of treatment, however, the amputee is limited by shoe-dependency, and overall aesthetics. By merging both areas of expertise of anaplastology and orthopedics, it is possible to produce foot prostheses that are successful in restoring normalcy to both form and function. This presentation will categorize the common levels of foot amputation, and describe a recommended process of prosthetic restoration for each. Principles of both practices will be highlighted during this overview, including:

- Suction retention in toe prostheses
- Adjacent toe suspension
- Forefoot prostheses
- Orthopedic modifications and materials in partial foot prostheses
- Direct sculpting techniques in high consistency silicone (HCR)

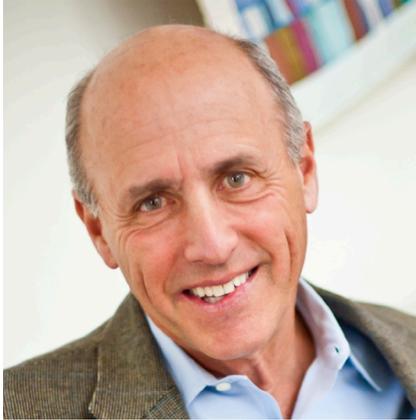
The involvement of the anaplastologist in the treatment of lower extremity amputations brings forth knowledge of techniques and materials often unfamiliar to orthotists and prosthetists. Only by bridging expertise to expertise can optimal prosthetic treatment be achieved.

### **About the Presenter**

**David Robinson** graduated in 2002 from the University of South Florida with a Bachelor's degree in Art Studio. His origins in Anaplastology began that same year, while working in the orthopedic industry as a technician and clinical assistant at Westcoast Brace & Limb Inc., in Tampa, Florida. His interest in the aesthetic finishing of upper and lower extremity prostheses, led him to Factor II, where he was instructed in the production of finger prostheses by anaplastologist, David Trainer. Over the next 12 years, David devoted his career to advancing his breadth in anaplastology to include somatic and maxillofacial prostheses, as well as applications for conventional orthotic and prosthetic devices. In 2014, in order to continue his advancement in the field, David joined the prestigious team at The Anaplastology Clinic, in Durham, North Carolina. David specializes in somatic prostheses, including fingers, hands, arms, breasts, toes and feet. Recognizing the need for increased durability and detail, he has spent years developing a fabrication process for custom silicone myoelectric arm coverings. He enjoys and encourages the spirit of collaboration with allied health professionals, specifically in the fields of physical and occupational therapy, and orthopedics. David is a Past Treasurer of the International Anaplastology Association.

CONFERENCE PROGRAM: GENERAL SESSION

Friday, 9:05 am – 9:35 am



## KEYNOTE

*Fixing Faces: WWI, Plastic Surgery, and the Modern Beauty Revolution*

Presenter

**David Lubin, PhD**

During the Great War, trenches exposed combatants' faces to sniper fire and flying shrapnel. In previous wars such wounds would have proven fatal. Now, with improved medical and transport services, the wounded could be saved—but not necessarily their faces. Crudely patched-together and sent back to the trenches or their families, men with “broken faces” were routinely ostracized. This lecture examines the humanitarian efforts of plastic surgeons to

restore obliterated faces and sculptors to fashion prosthetic masks, while also considering the modern beauty culture that arose in reaction to wartime unsightliness.

### About the Presenter

**David M. Lubin**, the Charlotte C. Weber Professor of Art at Wake Forest University, has written extensively on American art and popular culture. His most recent book, *Grand Illusions: American Art and the First World War*, was published last month by Oxford University Press. Professor Lubin has been named the inaugural holder of the Terra Foundation for American Art Visiting Professorship at Oxford University.

## CONFERENCE PROGRAM: GENERAL SESSION

Friday, 9:35 am - 10:05 am



## KEYNOTE

### *A Retrospective on the Team Approach and Implant Therapy in Maxillofacial Prosthetics*

Presenter

**Stephen M. Parel, DDS**

The concepts of Implant Dentistry and the Team Approach to using dental implants have not always been compatible. Beginning with the need for retention in removable prosthetics, especially dentures, and progressing through the advent of Osseointegration, there has been a remarkable shift in the need for a more coordinated effort in treating implant patients. Nowhere is this more important than in the field of Maxillofacial Prosthetics.

Dr. Parel will review over 45 years of experience in implant dentistry, and the enhanced effect of being able to use a team approach for treating one of the most deserving segments of our population, the Maxillofacial patient.

#### About the Presenter

**Dr. Stephen Parel** received his dental degree from The Medical College of Virginia in 1969. He spent one year as a general practice resident with the Veterans Administration Hospital in Richmond, which was followed by a two-year residency in Prosthodontics at the Wadsworth Veterans Administration Hospital in Los Angeles. He received his Maxillofacial Prosthetics training in Houston at the M.D. Anderson Hospital and Tumor Institute in 1973. He became a faculty member in the University of Texas System in 1975, rising to the rank of full professor in the San Antonio Medical and Dental Schools in 1978. He served as head of the Maxillofacial Prosthetics Division in the Department of Prosthodontics until 1991, which was followed by 7 years of private practice in prosthetic and implant dentistry.

Dr. Parel is a Diplomate of the American Board of Prosthodontics, the American and International College of Dentists, and is a member of many professional organizations, including the American Dental Association, the Academy of Prosthodontics, and the American College of Prosthodontics. He has been course director for osseointegration training at the University of Texas Health Science Center School of Dentistry in San Antonio, one of the four original Brånemark training centers in the United States. His literature contributions include over 45 scientific articles as principal author, and multiple textbook contributions. He was editor and co-author of *Esthetics and Osseointegration*, a landmark reference source for implant dentistry. He authored his second book, *The SmiLine System* in 1991, and completed a third book, *Esthetic Implant Restorations* several years later. He was co-founder of Osseointegration Seminars, Incorporated, and has been president of The American Academy of Maxillofacial Prosthetics, The Academy of Osseointegration, and The Osseointegration Foundation. He has received the Andrew J. Ackerman Award for meritorious lifetime service in the field of Maxillofacial Prosthetics, the Distinguished Lecturer and Dan Gordon Awards from the American College of Prosthodontics, and has served as an examiner and President of The American Board of Prosthodontists. He recently received the Brånemark Award for lifetime achievement in the field of Implant dentistry, the highest honor bestowed by the Academy of Osseointegration's Foundation and The Titanium Society.

Dr. Parel has served as a professor at Baylor College of Dentistry—Texas A&M University System Health Science Center and director of the Center of Oral Maxillofacial Prosthodontics in the Department of Oral and Maxillofacial Surgery/Pharmacology from 1998 until 2008. Since that time until 2013, he served as the founder and director of Prosthodontics at a private Implant Specialty Clinic in Dallas, Texas. He is presently in private practice, and serves as a consultant to several companies in the implant industry.



*The Application of Dicom Data with  
Z-brush 3D Software  
How Can the Design and Fabrication  
of an Epithesis be Supported by it?*

Presenter

**Yvonne Motzkus**

Co-Authors

**Kerstin Menzel, Ales Grygar, Jiri Rosicky, Sabine Toso & Jan-Dirk Raguse**

**Introduction:**

From extensive damage in the facial area after ablative surgery and/or radiation therapy, epithetic treatment can be a formidable challenge. Quite often the reduced and/or compromised bone structure available does not allow normal epithetic anchors to be used.

**Materials and Methods:**

Examples of patient cases are given where with the foundation provided by Dicom data and with the help of the Z Brush 3D software the preoperative planning, the framework and also the epithetic form was undertaken from 3D Print or 3D Visualization.

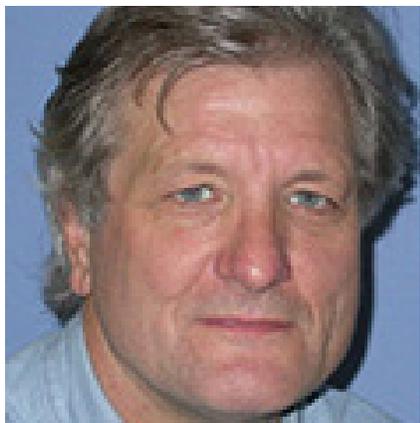
**Results/Conclusions:**

The CT and MRI data can be used to assist the epithetic provider with the corresponding software knowledge with the planning and fabrication of an individual epithetic structure. Planning dependability for the epithetic provider, clarity of communication with the surgeon through three dimensional visualization and practical assistance for the epithetic manufacture are the advantages of the analysis from Dicom data.

**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).



## *Facial Epithesis: Implant Survival and Patient Satisfaction*

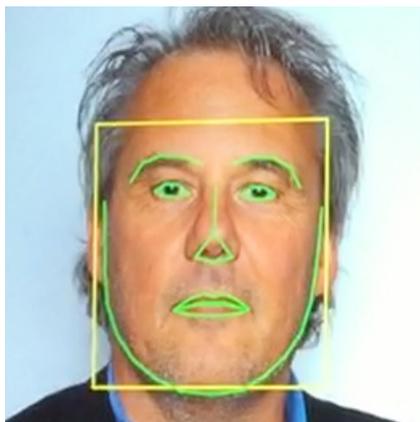
### Presenters

**Hubert Vermeersch, MD, PhD & Jan De Cubber, CDT** (*Biography available on page 27.*)

### Co-Authors

**Matthias Ureel, MD & Nele Brusselaers**

Facial deformities caused by trauma, congenital deformities or surgery may need reconstruction by means of facial epitheses, sometimes it is even the better choice. We have performed a systematic review and meta-analysis of the literature on implant survival in auricular, orbital and nasal epitheses, and will present these findings. At the University Hospital of Ghent, we have been working with implant-based facial epitheses for more than 25 years, supported by the laboratories of Jan De Cubber. Since his Laboratories have also been involved in these type of reconstructions at the University Hospital of Antwerp and the University Hospital of Maastricht (the Netherlands), a multi-center research project analysing all patients with implant-based auricular, orbital and nasal epitheses was started. By using a self-developed questionnaire patient satisfaction, self-esteem, health status and quality of life has been set up. We will also present our preliminary results of some 62 patients treated at the University Hospital of Ghent.



### About the Presenter

**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).



## *Immediate Reconstruction of Midfacial Defects After Ablative Surgery*

Presenter

**Jacobus Van den Heever**

Reconstruction following tumour resective surgery in the midfacial region remains a considerable challenge, as this area serves vital functional and aesthetic roles. Being diagnosed and treated for facial tumours has an immense psychosocial impact on patients as maxillectomy defects following treatment often leads to facial disfigurement, and an inability to chew, speak, or swallow. An obturator placed immediately following surgery can limit these undesirable side effects somewhat, and prevent mental duress on these patients and their family.

Zygomatic implants were originally developed for atrophic maxillae to provide prostheses retention without the need for bone augmentation. Studies have shown this treatment modality to be reliable, even when these implants are immediately loaded. Zygomatic implant placement at the time of surgical resection offers support and retention for simultaneous placement of obturators and facial prostheses. This dramatically improves post-operative recovery as these patients are not confronted with the stark reality of having a portion of their face missing. Another added advantage of this treatment modality is that it allows for surveillance of the resected site, and the ability to respond promptly to recurrent disease. We will present a few cases where this technique was used in the treatment of patients undergoing extensive midfacial ablative surgery.

### **About the Presenter**

**Cules van den Heever** is a part-time senior specialist in the Department of Prosthodontics at the University of Pretoria. He was recently appointed as an Extraordinary Professor at the Centre for Rapid Prototyping and Manufacturing, Department of Mechanical Engineering and Mechatronics at the Central University of Technology. He is also the clinical advisor to the Research Chair in Additive Manufacturing of Medical Devices at the Central University of Technology. His fields of interest and expertise include maxillofacial prosthodontics, osseointegrated implant therapy, and additive manufacturing and he has lectured at several national and international forums on these topics. The Centre for Rapid Prototyping and Manufacturing in cooperation with the Departments of Prosthodontics and Maxillofacial and Oral Surgery at the University of Pretoria are making ground-breaking advances developing novel ways of digitally manufacturing prostheses for use in the rehabilitation of patients with large head and neck defects.



## *XRT, HBO, OI: What It All Means*

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Presenter

**David Reisberg, DDS, FACP**

Osseointegrated implants provide improved functional and esthetic outcomes for oral and facial prostheses. The effect of tumoricidal doses of radiation on the success of osseointegration and the use of hyperbaric oxygen therapy in these cases are valid and controversial concerns. This presentation will present the scientific data and develop a rational protocol for clinical care.

### **About the Presenter**

**Dr. David Reisberg** received his dental degree from Case Western Reserve University in 1977. He completed a General Practice Dental Residency at Michael Reese Hospital in Chicago before going on to receive a certificate in Prosthodontics from Tufts University and one in Maxillofacial Prosthetics from The University of Chicago. He has been Director of the Maxillofacial Prosthetics Clinic at The University of Illinois Hospital and Health Sciences System in Chicago since 1981. He served as Medical Director of The Craniofacial Center there from 1998 to 2010. He is currently head of the Dental Unit and Prosthodontics and Maxillofacial Prosthetics. Dr Reisberg works with a team of medical and dental specialists and allied health professionals to provide comprehensive care to children and adults with congenital and acquired craniofacial conditions. He is recognized internationally for his work using osseointegrated implants for oral and craniofacial rehabilitation. He is past president of the International Society for Maxillofacial Rehabilitation and the Illinois Association for Cleft/Craniofacial Teams and Vice President-elect of the American Academy of Maxillofacial Prosthetics. He is also the current president of Ameriface, a national organization that supports people with facial differences. Dr. Reisberg is certified by the American Board of Prosthodontics.

## CONFERENCE PROGRAM: GENERAL SESSION

*Friday, 11:25 am – 11:40 am**Clinical Cross-Contamination*

Presenters

**Paul Tanner, CCA & Christian Bartulovich**

Have you ever seen black spots on a prosthesis? Have you ever wondered if you are responsible for “sharing” microbes in your office? Our inquiry and study began with the question, “Can I reuse wax from patient to patient?” and evolved into many more questions about cross-contamination. After sampling and incubating microbes on various surfaces during the fabrication of prosthetics, we answered many questions of what we should and should not do to prevent cross contamination in the clinical setting.

**About the Presenters**

Challenge. Creativity. Art. Technician. Those are the words that came into **Christian Bartulovich's** mind when he discovered facial prosthetics when he was just an undergraduate student in the Dental School at the University of Concepcion. He was baptized by fire when one of his colleagues asked him if he could help with a facial impression. From that moment on, he knew the specialty he would pursue. After graduating from Dental School, he specialized in facial prosthetics in his Alma Mater, and later was hired as instructor of Traumatology and Maxillofacial Prosthetics, and has been working at the University Clinic of Prosthetics ever since. As an Assistant Professor with a Master's degree in Education, and Christian continually improves by participating in CE courses in the USA, Brazil and Cuba. Christian continues to pursue excellence through his work, and development of better prosthetics in this field. Devoted to this art since 2003, he continues walking through life, not forgetting the undergrad

student that started strolling in this path, 16 years ago.

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 and founded the facial prosthetics program in 2002 in the newly built Huntsman Cancer Hospital at the University of Utah. It is now well-respected and highly regarded for quality work and care for some of the most challenging facial prosthetics cases. He works with a lot of cancer cases and he has a special interest in working with young children with microtia. Paul speaks Portuguese and Spanish and enjoys international continuing education. He has worked with 49 different facial prosthesis patients while teaching what he knows in training courses in Brazil, Turkey, and Colombia. Early on, Paul recognized that the greatest challenge to realistic prosthetics was color matching. He coupled his prior work experience in dermatology and his intrigue in optics and science to research ways to create the illusion of human skin and hone his coloring techniques.



## *Immediate Surgical Piercing for Nose Prosthesis Retention*

Presenter

**Gaston Bernier, FADQ, DMD**

For nose cases without enough bone to place two or three regular fixtures, and an active patient who does not want a bone graft at first, we used the remanant soft tissue structures after the resection of the cancer to anchor a prefabricated metallic piercing the hold a magnet. A five year follow-up took place and a video of the surgery will be included.

### **About the Presenter**

**Gaston Bernier, DMD, FADQ** received a Doctorate in Dental Medicine from University Laval, at Quebec City Canada in 1986, and trained in oncology in Toronto in 1988. He joined the CHU de Quebec Hospital in 1988 where he founded and developed the Oncology Dental and Anaplastology Unit with Louise Desmeules. Gaston has been a member of the IAA since 2009 and currently serves as member of the board. Before that, he chaired the Medical Advisor position at Canadian Cancer Society, Quebec Division, and served on numerous boards for university and civil organizations. As a cranio-facial implant surgeon and researcher, Gaston looks forward to collaborating with other IAA members, biomedical engineers and physicians for new solutions in the anaplastology field.

## CONFERENCE PROGRAM: GENERAL SESSION

Friday, 1:50 pm - 2:15 pm



## *Maxillofacial Rehabilitation: The UIC Experience*

### Presenters

**Rosemary Seelaus, MAMS, CCA & David Reisberg, DDS**

Maxillofacial rehabilitation is well recognized as a team effort; engaging the talents of the anaplastologist, prosthodontist, surgeon, and allied health professionals. The prosthetics team at UIC was established more than fifty years ago and continues to provide comprehensive care for pediatric and adult patients with congenital and acquired facial conditions. This presentation will trace the development of the team at UIC. Highlighted will be its history and evolution, FDA experience, protocols of care for both adhesive and implant-retained prostheses, integration of digital applications, and a financial model for success.



### About the Presenters

**Dr. David Reisberg** received his dental degree from Case Western Reserve University in 1977. He completed a General Practice Dental Residency at Michael Reese Hospital in Chicago before going on to receive a certificate in Prosthodontics from Tufts University and one in Maxillofacial Prosthetics from The University of Chicago. He has been Director of the Maxillofacial Prosthetics Clinic at The University of Illinois Hospital and Health Sciences System in Chicago since 1981. He served as Medical Director of The Craniofacial Center there from 1998 to 2010. He is currently head of the Dental Unit and Prosthodontics and Maxillofacial Prosthetics. Dr. Reisberg works with a team of medical and dental specialists and allied health professionals to provide comprehensive care to children and adults with congenital and acquired craniofacial conditions. He is recognized internationally for his work using

osseointegrated implants for oral and craniofacial rehabilitation. He is past president of the International Society for Maxillofacial Rehabilitation and the Illinois Association for Cleft/Craniofacial Teams and Vice President-elect of the American Academy of Maxillofacial Prosthetics. He is also the current president of Ameriface, a national organization that supports people with facial differences. Dr. Reisberg is certified by the American Board of Prosthodontics.

**Rosemary Seelaus** is Senior Anaplastologist at The Craniofacial Center in the Department of Surgery at the University of Illinois Hospital & Health Sciences System in Chicago, Illinois. She has been practicing clinically for nearly 18 years. Prior to her current position of 11 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 and in demonstrating improved clinical efficiencies. Ms. Seelaus received a Master of Associated Medical Sciences in 1997 from the University of Illinois at Chicago (UIC), and a Bachelor of Science degree in 1989 from Northwestern University, Evanston, IL.

Ms. Seelaus 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); served on the Board for Certification in Clinical Anaplastology (BCCA). Currently, Ms. Seelaus serves as Co-Chair for the Special Interest Group in Facial Prosthetic Rehabilitation (SIGFPR) for the International Society of Maxillofacial Rehabilitation (ISMR); Chairs the Education Committee for the Advanced Technology in Head & Neck Reconstruction North American Leadership Group (ADT N.A.), and is an Honorary Member of the Sociedad Latinoamericana de Rehabilitación de la Cara y Prótesis Bucomaxilofacial.

## CONFERENCE PROGRAM: GENERAL SESSION

Friday, 2:15 pm - 2:40 pm



## *Surgeon and Anaplastologist/Ocularist Team Approach in Case Management*

Presenters

**Jorge Corona, MD & Randy Trawnik, BCO, FASO**

We will describe the multidisciplinary collaboration of physicians, ocularists and anaplastologists in the complex management of a patient with facial mucormycosis.

### About the Presenters

**Wm. Randall (Randy) Trawnik BCO, FASO** came to the ocularist profession following his own eye loss at age 17. After graduating from the University of Texas at Arlington, he trained with noted pioneer ocularist John H. O'Donnell. He completed his U.S. Government sponsored training program in 1975 and received his Master of Ophthalmic Prosthetics from the American Society of Ocularists (ASO) in 1978 and Fellowship in 1984. Mr. Trawnik has been an active member of the ASO serving as faculty lecturer, Education Committee Co-Chair, Vice President and President. In 1995, Mr. Trawnik was the A.D. Ruedemann Award Lecturer for the American Academy of Ophthalmology. Acclaimed nationally and internationally for his outstanding work in the field of ophthalmic prosthetics, Mr. Trawnik is also well known for his pioneering work in the field of prosthetic management of congenital anophthalmos and microphthalmos. In addition to his private practice M. Trawnik has done Medical Mission work in Central America with LEAP and HELPS. Mr. Trawnik also serves as Associate Clinical Instructor for the Department of Ophthalmology at UTSW Medical School.



**Dr. Jorge Corona** was born and raised in Mexico City. He graduated with honors from from Universidad La Salle, School of Medicine in Mexico City. He was a participant at the William J. Harrington Latin American training program of the University of Miami during his last year of medical school. After an internship in general surgery at the University of Virginia in Charlottesville, he completed he completed his ophthalmology residency at Texas Tech University Health Sciences Center in Lubbock where he was co-chief resident during his senior year. He pursued a fellowship in oculoplastics and orbital surgery at McGill University in Montreal, Canada under Franois Codre, MD and Bryan Arthurs, MD. After graduation, he served as an oculoplastic surgeon at the Veterans Affairs Medical Center in Big Spring, TX before joining Oculoplastic Associates of Texas in 2007. Dr. Corona is board certified in ophthalmology and is past president of the Dallas Academy of Ophthalmology. He is a clinical assistant professor at Texas Tech University Health Science Center. He has completed several marathons including the New York City Marathon and Boston Marathon. He reached the summit of Mount Aconcagua in Argentina (tallest mountain in the world outside of the Himalayas) and has climbed mountains in Mexico, Ecuador and Europe. He has been involved in several international humanitarian trips to China, Mexico and Guatemala. Currently he is the leader of a team of over 100 volunteers who go to Guatemala with Helps international to deliver health care in remote areas of the country. For the past 10 years he has been involved at the annual meeting of the American Academy of Ophthalmology teaching surgeons from all over the world endoscopic techniques of the lacrimal system. As a member of the Pan-American Oculoplastic Society he receives in his practice in Dallas members of the society for observerships. He has published articles in peer reviewed journals and has lectured in many international meetings in the USA, Canada, Mexico, Latin America, Europe and China.

## CONFERENCE PROGRAM: GENERAL SESSION

Friday, 2:40 pm – 3:05 pm



## *Craniofacial Implant Service – The Morriston Experience*

Presenter

**Peter Llewelyn Evans, MIMPT**

### *The Morriston Experience*

Our unit team has been rehabilitating patients with acquired and congenital craniofacial defects using surgical reconstruction and craniofacial implants for nearly 30 years. The role of the team has always been critical, but the skill required of the anaplastologist / maxillofacial prosthetist within the team has changed substantially in that time from the early days of metal casting for trauma splinting to complex surgical 3D digital planning.

This presentation examines these changes, our current planning, surgical implant procedures, dressing protocols and prosthetic treatment regimens for a wide range of cases and highlights the possible pitfalls and successful protocols we feel work for the long term rehabilitation of our patients.

### About the Presenter

**Peter Llewelyn Evans, MIMPT** 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 Maxillofacial Laboratory 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 the use of digital technology in Maxillofacial surgery and technology and in particular on the integration of digital technologies into facial prosthetics and 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) a founder member and secretary of the Centre for Applied Technology in Surgery (CARTIS) and Secretary to the Advanced Digital Technologies (ADT) Foundation.



## *Lower Lid Laxity*

Presenter

**Kuldeep Raizada, PhD, BCO, BADO, FAAO**

Co-Author

**Deepa D. Raizada** (*Biography available on page 46.*)

Lower lid plays a very important role in overall cosmetic appearance as well as the stability of an ophthalmic prosthesis in anophthalmic sockets. Lower lid starts to sag down when there is poor lower lid support, and affect aesthetics. This presentation will take you to the various reasons how it relates each factors while you are looking to provide an aesthetic appealing eye prosthesis in various age group. This presentation is case study based on different conditions.

### About the Presenter

**Kuldeep Raizada** is a Licensed Ocularist in Hyderabad, a Board Certified Ocularist (BCO) from National examination Board of ocularists, USA and a Board Approved Diplomate Ocularist (BADO) from American Society of ocularists, specializing in ocular prosthetics since 2001, Kuldeep places his emphasis on the satisfaction and well-being of every patient. His clinical skill and expertise are equally matched by his personalized care for patients and attention to detail. Kuldeep Raizada completed his basic optometry education at Gandhi Eye Hospital, Aligarh, and has his training 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 Centre, Houston. He has also been trained by the top most ocularist and anaplastologist in United States of America. His clinical interests include ocular and facial prosthesis, particularly in pediatric patients. His research interests lie in newer advancement in development of new types of prosthesis, newer solution for ptosis corrective glasses. Kuldeep Raizada, is Founder & Director of the International Prosthetic Eye Center since 2010, where he is practicing since 2010. Kuldeep Raizada has been recognized by the American Society of Ocularist, USA and American Anaplastology Association, USA and by several other professional organizations, for his excellence in research and clinical practice. Kuldeep Raizada, have completed all requirements by American Society of Ocularist, which is hard work of 14000 working hours as well extensive study for prosthetics, Hence awarded the Diplomate Ocularist from American Society of Ocularist, USA, 2012, Chicago, USA, which is the First ever received all over Asia Pacific & throughout Middle East so ever. At present he is reviewer of several journals like Contact Lens & Anterior Eye, International Journal of Anaplastology, Oculoplasty & Reconstructive Surgery (OPRS) and Many others. He has published and presented world widely.

## CONFERENCE PROGRAM: GENERAL SESSION

Friday, 3:35 pm – 3:50 pm



## *The Development of an Orbital Prosthesis Workflow Using Advanced Digital Technologies*

Presenter

**Rose Perry**

Co-Author

**Juan Garcia, MA, CCA** (*Biography available on page 24.*)

In contrast with traditional prosthetic techniques, this research investigates a novel workflow for creating a combined silicone orbital and acrylic ocular prosthesis that fulfills the impression, sculpting, and mold-making phases entirely by utilizing advanced digital technologies. This research investigates and documents several key technological processes including: the 3D capture of both affected and unaffected eye areas using digital photography and photogrammetry software; digital sculpting for mirroring and adaptation of the unaffected eye over the affected eye; creating a 3D 3-piece mold; and 3D printing a mold that can be used to produce a final, traditional silicone orbital prosthesis and acrylic ocular prosthesis. The project provided an opportunity to explore potential future workflows and to evaluate the efficacy of using advanced technologies new to the field of anaplastology. This research identified several unique challenges to the capture and replication of a 3D eye form in order to create a digital prosthesis. The documented workflow proposes several possible solutions integral to the results obtained in this project.

### **About the Presenter**

**Rose Perry** grew up in a supportive, artistic environment and developed a passion for the natural sciences at a young age. She began her journey of becoming a medical illustrator when she noticed a Careers In Art poster in her high school. After graduating from Iowa State University magna cum laude in 2012, Rose was awarded two degrees, a Bachelor of Arts in Biological/Pre-medical Illustration and a Bachelor of Arts degree in Spanish. Rose was first introduced to the field of facial prosthetics in college and applied to a graduate program where she would have some exposure to the field. Rose is a recent graduate of the Art As Applied to Medicine graduate program at The Johns Hopkins University, School of Medicine. During her graduate studies, Rose was awarded the Golden Key Graduate Scholar Award, an internationally recognized distinction. She also had the opportunity to work with Juan Garcia on her thesis project and learn about various digital technologies and their applications to facial prosthetics. Rose first attended an IAA conference two years ago in Denver, and she is excited to return for this year's conference.



## *Custom Ocular Prosthesis Fitting Following Evisceration: Staphyloma vs. Non-staphyloma Cases*

Presenter

**Deepa Rani Diddi**

Co-Author

**Kuldeep Raizada, PhD, BCO, BADO, FAAO** (*Biography available on page 44.*)

**Purpose:** To assess and compare the prosthetic eye fitting in the patients undergoing evisceration with implant in staphyloma vs. non-staphyloma cases.

**Methods:** It was a retrospective, comparative and interventional study. Patients who underwent evisceration with silicone orbital implant placement, and fitted with custom ocular prosthesis between August 2006 and April 2007 were included. Based on the indication for surgery, the patients were grouped under staphyloma and other conditions. Eyelid and socket abnormalities, and additional modifications undertaken to correct these abnormalities during fabrication of custom prosthesis were assessed, and compared between the two groups. Independent samples T-test was used for statistical analysis.

**Results:** In the staphyloma group, 9 of 16 (56.3%) had ptosis (6), eyelid retraction (2), and deep superior sulcus (1) needing prosthesis modification. In contrast, the patients who underwent evisceration for other conditions, only 2 of 27 (7.4%) required modifications for lid sag. Statistical analysis showed significantly greater number of patients needed modifications in staphyloma group as compared to non-staphyloma group ( $P=0.001$ ). Implant size, and duration between the date of surgery and the prosthesis fitting were compared between two groups, which showed no statistically significant difference ( $P=0.096$  and  $P=0.108$  respectively).

**Conclusion:** The patients with staphyloma undergoing evisceration with implant can have cosmetically concerning eyelid abnormalities, most commonly ptosis that may need attention during fabrication of the prosthetic eye. These eyelid abnormalities could be due to long standing effect of staphyloma, possibly due to levator disinsertion, dehiscence or stretching; or due to insufficient volume replacement by an orbital implant.

### **About the Presenter**

**Deepa Raizada** completed her diploma and clinical fellowship in optometry at L V Prasad Eye Institute, India, in 2003, pursued her graduation from Madhurai Kamraj University, 2006. She had completed her Master of Science (M Sc) in Maxillofacial and Craniofacial Technology (2010-2012), Kings Collage London, UK where she was trained to work exclusively in the field of Maxillofacial Prosthetics. Deepa is also an associate Member of The Institute of Maxillofacial Prosthetist & Technologist, UK (AIMPT) since 2014. & Active Member of International Anaplastology Association, (IAA) USA since 2009. She persued her basic training in Ocularistry from L V Prasad Eye Institute, Hyderabad and advanced training in Ocular Prosthetics (May - July, 2005) at Moorefield;s Eye Hospital, London, UK under Mr Nigel Saap. She worked as an Ocularist at Ocular Prosthesis Department, L V Prasad Eye Institute from 2003 - 2010. She worked with different type of techniques, developed new techniques in the fabrication and fitting of ocular & facial Prostheses. Her work was well recognized and appreciated. Her clinical interest include make her career in the art and science of facial prosthetics and ocular prosthetics, particularly in pediatric patients. Her research interests lie in developing new techniques in the field of facial prosthetics, and undertake research on materials used in this field. Deepa Raizada has been recognized by the Oculoplasty Society of India, Indian Optometric Association and by several other professional organizations in India as well as Internationally, for her excellence in research and clinical practice.

## CONFERENCE PROGRAM: GENERAL SESSION

Friday, 4:05 pm – 4:20 pm



## *Clinical Application of Monoscopic Photogrammetry & Desktop 3D Printing in Facial Prosthetic Fabrication - The Affordable Alternative*

Presenter

**Rodrigo Salazar Gamarra, DDS**

Purpose

Show an affordable workflow of 3D photography, using monoscopic photogrammetry and desktop 3D printing to assist the sculpture process of facial prosthetics.

### Methods and Materials

Patients who attended the Bucomaxilofacial Prostheses of the Universidade Paulista for maxillofacial prosthetic treatment, and voluntarily accepted to participate were selected. With the use of mobile devices and SLR cameras, pictures of patient's facial anatomy were captured and converted into digital 3D models by methods of monoscopic photogrammetry. The images were processed by free software (123DCatch) and transformed into a \*.stl model for analysis and printing. The resultant digital models were used to be duplicated in wax and served as a startup for the sculpture. Finishing details were needed for.

### Results

3D models obtained by the use of monoscopic photogrammetry and the digitally edited prostheses were useful for desktop 3D printing and served well as a startup for sculpture once duplicated in wax.

### Conclusions

Alternative and affordable methods for capturing patient facial anatomy and 3D printing are possible using mobile devices, SLR cameras combined with desktop 3D printing for use in maxillofacial prosthetic treatment.

### Clinical implications

Free 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 and having a well startup for sculpture.

## About the Presenter

**Dr. Rodrigo Salazar** is a Peruvian dentist, Specialist in Oral Rehabilitation, and Masters student in maxillofacial prosthodontics in the Paulista University at São Paulo Brazil and serves in the Maxillofacial Prosthetics Clinics of the UNIFESP São Paulo Brazil.

He serves as Secretary of the International Anaplastology Association and 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 member of the International Society of Maxillofacial Rehabilitation and 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: POST-CONFERENCE COURSE

Saturday, 9:00 am – 12:00 pm



## *Experience and Explore the Digital Workflow in Virtual Surgical Planning and Prosthetic Reconstruction*

### Presenters

**Katie Weimer, Jesse Knowles, Suzanne Verma, MAMS, CCA, Rosemary Seelaus, MAMS, CCA, Marianela Gonzalez, DDS, MD & Juan Garcia, MA, CCA**

This workshop allows attendees to explore the digital workflow as it applies to virtual surgical planning and prosthetic reconstruction. Participants will experience the following steps in the technological process:

- Data acquisition
  - CT, CBCT, and Stereophotogrammetry with 3DMD capture
- Data manipulation
  - Virtual surgical planning for bone grafts, custom implants restoring bone contour, and guides for craniofacial implant placement
  - Prosthetic prototype design using Freeform Haptics sculpting
- Intraoperative Technology
  - 3DPrinted Surgical cutting and implant guides
  - Virtual planning for Navigational Surgery
- Physical output using a variety of 3D printing options



### About the Presenters

**Mr. Juan R Garcia** is a Certified Clinical Anaplastologist (CCA) serving as the Director of the Johns Hopkins University Facial Prosthetics Clinic. He is also an Associate Professor in the Department of Art as Applied to Medicine in the Johns Hopkins University School of Medicine. He leads the program in Supervised Training in Clinical Anaplastology as well as teaches in the medical illustration graduate degree program. Juan graduated with an MA degree in Medical & Biological Illustration from Johns Hopkins. His clinical anaplastology

training experience included several technical exchanges at Columbia University/Bronx VA, Toronto-Sunnybrook Cancer Center, Sahlgrenska Univ. Hospital, Kings College London (in Pune India) as well as with respected colleagues Gillian Duncan, Fred Harwin, and Barbara Spohn-Lillo. Juan currently serves as the Vice President of the Board for Certification in Clinical Anaplastology (BCCA), having led the Job Task Analysis leading to the development of the credential. He is a past president of the International Anaplastology Association (2002-3).

**Dr. Marianela Gonzalez** is Assistant Professor and Director of Undergraduate Education in the Department of Oral &



Maxillofacial Surgery at Texas A&M Baylor College of Dentistry in Dallas, Texas. She earned her DDS in Caracas, Venezuela, and Oral Maxillofacial Surgery Residency and Master of Science in Craniofacial Biology at Baylor College of Dentistry. Her areas of interest in which she has over 16 years of clinical experience include distraction osteogenesis, complex facial fractures, bone and soft tissue regeneration using BMP-2, dental and craniofacial implants, cosmetic procedures to enhance the results of orthognathic surgery as well as orthognathic surgery for all craniofacial deformities. Dr. Gonzalez is Editor of the book “Intraoral Maxillofacial Distraction,” (Wiley Co.2016), and author and co-author of numerous articles and book chapters. She is President of the North Texas Oral Surgery Society and past Secretary of the American College of Oral Maxillofacial Surgeons.



**Jesse Knowles** works with 3dMD customers in hospitals, universities, government agencies and manufacturing companies in the Americas to help them achieve their 3D imaging objectives. Users such as imaging professionals, researchers, surgeons and team coordinators need 3dMD applications including cleft/craniofacial, cancer, trauma, prosthetics, genetics, oral surgery, breast reconstruction, Head & Neck reconstruction, burns, facial recognition, biometrics, human factors and others.



**Rosemary Seelaus** is Senior Anaplastologist at The Craniofacial Center in the Department of Surgery at the University of Illinois Hospital & Health Sciences System in Chicago, Illinois. She has been practicing clinically for nearly 18 years. Prior to her current position of 11 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 and in demonstrating improved clinical efficiencies. Ms. Seelaus received a Master of Associated Medical Sciences in 1997 from the University of Illinois at Chicago (UIC), and a Bachelor of Science degree in 1989 from Northwestern University, Evanston, IL.

Ms. Seelaus 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); served on the Board for Certification in Clinical Anaplastology (BCCA). Currently, Ms Seelaus serves

as Co-Chair for the Special Interest Group in Facial Prosthetic Rehabilitation (SIGFPR) for the International Society of Maxillofacial Rehabilitation (ISMR); Chairs the Education Committee for the Advanced Technology in Head & Neck Reconstruction North American Leadership Group (ADT N.A.), and is an Honorary Member of the Sociedad Latinoamericana de Rehabilitación de la Cara y Prótesis Bucomaxillofacial.

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**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 Morrision 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, Director on the Board for the World Coalition of Anaplastology, and serves as Vice President for the International Anaplastology Association.

**Katie Weimer**—who developed the company's Virtual Surgical Planning (VSP) capabilities—began her efforts at Medical Modeling in 2008 and has taken on roles of increasing responsibility since the move to 3D Systems in April of 2014. Katie is drawing on her considerable experience to lead 3DS medical device development and sales and manufacturing activities, which include VSP, anatomical modeling, medical imaging and modeling, design services and direct metal printing services. Katie, who has been involved in 3D printing for almost a decade, aims to revolutionize Healthcare by combining proprietary and powerful workflows in a “digital thread” with the ability to create templates, guides, instruments and even implants using 3D printing technologies.

Katie received her undergraduate degree in mechanical engineering from the University of Missouri - Kansas City. She then continued at the University of Missouri - Kansas City where she received her Master of Science degree in Mechanical Engineering. She has published over ten manuscripts in scientific/clinical journals, coauthored an upcoming book chapter and she speaks frequently on her area of expertise in personalized surgery nationally and internationally.

## CONFERENCE PROGRAM: POST-CONFERENCE COURSE

Saturday, 1:00 p.m. – 4:00 p.m.



## *An Update on Mold Making and Casting Techniques*

### Presenters

**Mitch Rogers (Brick In The Yard Mold Making Supply) & Pattii Montgomery**

This workshop will address the basics of mold making and casting using materials that will save you time and money. Easy to use materials like silicone rubber and resin casting for life casting, positive and negative molds, and more.

### About the Presenters

**Pattii Montgomery** is a senior Anaplastologist in the Section of Oral Oncology and Maxillofacial Prosthodontics at MD Anderson Cancer Center in Houston, Texas. She received her clinical training beginning in 2003, under the guidance of a maxillofacial prosthodontist and a certified clinical anaplastologist through a unique apprenticeship opportunity at MD Anderson Cancer Center.

She utilizes her extensive graphic design and illustration experience in the design and fabrication of facial prostheses, nasal conformers and custom tracheostoma devices. Her training as an anaplastologist has included continuing education programs in osseointegrated implants for facial prosthetics, 3d modeling for facial applications, and advances in maxillofacial materials and techniques.

Her research interests include digital and 3d imaging in the field of anaplastology, digital imaging in ocular fabrication, and most of all, enhancing the quality of life for facial prosthetic patients.

Before starting her career at MDACC in 2003, Ms. Montgomery was Vice President/Creative Director of MMI Agency (Marion, Montgomery, Incorporated), a full service marketing communications, advertising and public relations firm that she co-founded in 1985. She was responsible for all aspects of concept, design and production with a specialty in healthcare marketing.

**Mitch Rogers** started his professional mold making career at a fine art bronze foundry in Lubbock, Texas. Since that time, Mitch has made molds for stone shops, design shops, sculptors, display companies, prosthetics, prototypes, taxidermists, films, and more. This combined experience led to the formation of BITY Mold Supply in Richardson, TX. Mitch is now retired from production and focuses his efforts on assisting customers and creating how-to videos relative to the molding and casting questions we receive daily.

## CONFERENCE PROGRAM: POSTER PRESENTATIONS

### *Alternative Hardware Arrangement for Very Thin Soft Tissue: Omit the Abutment*

Presented by **Allison Vest, MS, CCA**

Craniofacial implants placed to support a facial prosthesis can be challenging for many reasons. This patient presented with implant locations and angles which prevented a typical hardware arrangement from being successful. A customized approach which included modifying hardware into an “Off Label” use was proposed to the patient and ultimately fabricated. This treatment process is described with photos illustrating the modified technique.

#### About the Presenter

**Allison Vest** received her Bachelor’s degree from New College in Sarasota, Florida in 2002. Her Master’s degree was earned in 2004 from the University of Illinois Chicago Graduate School of Biomedical Visualization. Her post graduate facial prosthetic training includes an internship in the Maxillofacial Prosthetics Clinic at the University of Florida Medical Center and an externship at the Morriston Hospital in Swansea, Wales. Ms. Vest serves as owner and anaplastologist at Medical Art Prosthetics southern office located in Texas. Additionally, Ms. Vest serves on the BCCA board as secretary.

### *Anaplastology Concepts Applied in Medical Simulation*

Presented by **Margarita Caicedo & Alejandro Echeverry**

In this era of high-tech and digital displays, microprocessors have given the computing industry the capability to simulate infinite possibilities in real time, giving them a never before seen advantage in digital content. But where does physical tangible devices stand regarding simulation and what are their advantages? This abstract is a synopsis of a project performed in Cali, Colombia, for an Anesthesiology committee which needed four high-fidelity simulators for ophthalmological anesthesiology training procedures. This

simulators consist of a resin skull, eyes, inner circuitry for a failure visual/sound cue, and the outside covering tissue (skin) which was needed to recreate not just the behavior, visual/tactile aspects and thickness of real skin, but also be wear-resistant and have the capability to be pierced by a needle continuously without losing its properties. The ophthalmological anesthesiology procedure in need to recreate involves a needle entering through the lower inner eye lid under the eye administering the anesthesia for surgical ophthalmological interventions. This was the main reason for the skin recreation to be as real as possible simulating the behavior of eye-lid skin, giving the correct feel of the needle navigating through organic tissue and the challenge to work around a rigid sensible nose. Different anaplastology techniques were applied in the development of this covering skins such as facial impressions, mold crafting, waxing, silicone handling, skin tone characterization, etc. Being involved in anaplastology projects concerning just orbital, nose, ear, fingers and ocular prosthetics, this full facial project was a successful challenge that we want to share with everyone in the association.

#### About the Presenters

**Margarita Caicedo** is an optometrist, anaplastologist and ophthalmologist. Born in Buga, Colombia, she has been involved in several projects regarding anaplastology and ocular prosthetics in the last ten years focusing on prosthetics development as well as patient handling and care. She is a member of the craniofacial rehabilitation group at the Centro Medico Imbanaco in Cali, Colombia.

**Alejandro Echeverry** is an industrial designer born in Cali, Colombia participating as a fellow in Anaplastology. He is helping through process management and material appliances in several anaplastology cases developing successful prosthetics for different facial rehabilitation patients.

### *Techniques Used to Fabricate a Nasal Bandage*

Presented by **Natalie Aguilar**

The purpose of this poster is to present clinical examples of the benefits and techniques used in creating a nasal

bandage for patients receiving a rhinectomy. The result of these particle procedures often render both emotional and physical devastating results for the patient and the creation of the interim addresses both the esthetic and functional need for a temporary prosthesis. The nasal bandage provides visual restoration of nasal anatomy while allowing the tissue to heal in anticipation of fabrication of the definitive. The nasal bandage is also being requested to be fabricated with delivery of the definitive as well because patients are desiring to use the bandage as a backup or for easy application when traveling, running errands or at home. All of the cases presented in the poster will have been treated at the MD Anderson Cancer Center.

### About the Presenter

**Natalie Aguilar** is an Anaplastologist currently working at MD Anderson Cancer Center. She has a BFA in painting, an MFA in sculpture and successfully completed a training program with Columbia University Dept. of Dentistry and Oral Surgery/Bronx VA Medical Center. She since has spent the last 7 years creating maxillofacial prostheses and intraoral/dental prostheses with private practices and now MD Anderson.

### Toes Prosthesis

**Presented by Louise Desmeules & Annie Laverdière**

We will show two cases of toes prosthesis. They were previously done for aesthetic, but the use reveals a surprising functional effect.

### About the Presenters

**Louise Desmeules** left the nurse life to become an anaplastologist since 2000. She combined her skill with Dr. Gaston Bernier to develop the anaplastology field for the east of Canada population. She is always seeking for new ways of treatment and the improvement of the field, like the Seinbiose breast prosthesis research project.

**Annie Laverdière** started her career as a radiation technologist. She has been a junior anaplastologist with Louise Desmeules since 2012, but full time since September 2014. She is working to develop virtual workflow for a breast prosthesis research project.

### Transradial Prosthesis Application of Digital Technology in Anaplastology

**Presented by Tomas Bouma**

**Co-Authors Include Jiri Rosicky & Ales Grygar**

**Purpose:** The application of digital technology for design & manufacturing of upper limb prosthesis represents an alternative to manual procedures in anaplastology. The aim of this poster is to demonstrate how we combine digital technology (3D scanning, computational modelling, 3D printing) with manual direct sculpting from HCR silicone.

**Materials and Methods:** Computational models of a sound upper limb and a residual limb are obtained by scanning precise plaster models taken from a patient. The mirror-model of the patient's upper limb is used to design a transradial prosthesis. The complete prosthesis is manufactured by 3D printing and assembled with a silicone cover made from HCR silicone by direct sculpting. Both intrinsic and extrinsic colouring techniques are used during the manufacturing process. Depending on a clinical requirement we have different design versions of prosthetic hands.

**Results:** We have been manufacturing transradial prostheses with 3D printed structural parts and silicone cover for more than 4 years. We are improving the design of transradial prostheses from passive cosmetic hands to hands with shape-able or pre-flexed fingers and adjustable wrist ball joint.

**Conclusions:** We have found the combination of digital technology and manual procedures very useful to improve comfort, function and appearance of transradial prostheses.

### About the Presenters

**Tomas Bouma, Bc.** is working at Invent Medical Group and ING corporation as a product designer. Tomas is involved in the field of Anaplastology since 2014. His professional focus is on application of digital technologies in prosthetics & anaplastology (CAD/CAM, computational modelling, 3D scanning, 3D printing). Tomas earned a bachelor's degree in industrial design at VSB - Technical University of Ostrava.





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