International Anaplastology Association

UNITED COLORFUL SKILLS: *The Unique Color of Anaplastology*

32ndANNUAL EDUCATIONAL CONFERENCE

Québec City, Canada

.



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CONTENTS

President's Welcome	02
Program Chair Welcome	03
Conference Sponsors	04
At A Glance Schedule	06
Pre-Conference Program	10
Conference Day 1	12
Conference Day 2	20
Poster Presentations	28
Notes	30

Welcome

Dear Colleagues,

It is my pleasure to welcome you to the 32nd Annual Educational Conference of the International Anaplastology Association in Québec City, Canada. I would like to say thank you to our conference planning committee for donating their time to prepare and execute an informative educational program. Their dedication to furthering our education and encouraging collaboration is what makes the IAA a wonderful association.

The IAA is a unique organization of international professionals with multifaceted approaches to treating facially disfigured patients. Our annual conference provides the opportunity for members of the IAA and future members to meet, mingle, exchange ideas and share their expertise to further the future of Anaplastology.

What is the future of Anaplastology? It seems we have this same question each year we meet. This conference will address challenges in facial reconstruction, advancing our skills, and looking into the next frontier of science and anaplastology.

It's hard for me to believe that 2018 marks my 15th year at MD Anderson Cancer Center in Houston, Texas. Changing career paths and becoming an Anaplastologist has been a life changing experience for me. Serving as President of the International Anaplastology Association has been an honor. I look forward to many more years of contributing to this organization and the field of Anaplastology. Thank you to all the board members who have supported me through this year. Your enthusiasm and commitment of time has been greatly appreciated.

There is much excitement and many challenges ahead as advancements in technology change the way facial prosthetics are designed, fabricated and delivered to our patients. Many of you are already embracing new technology and contributing to these advancements. Imagine what we will be able to create. Imagine how what we create will impact the lives of the facially disfigured. I'm proud to be an Anaplastologist.

Sincerely

Pattii Montgomery LAA President



IAA is unique by the diversity of skills we find in our field. What is the DNA of this incredible learning machine that we call a senior anaplastologist? Let me, as an outsider surgeon, use a poetic analogy. Green stands for...the thorough welcome, the deep respect and the hope to recover a normal life; often the life as it was before the disease, we give to our affected patients. Purple...for the vivid imagination to create new solutions from common background, to try new technology, to advance without a safety net. Blue, oh blue... for the amazing search of excellence, the amazing search of beauty with a patient pace. Red...for the energy, the capacity to produce under pressure, the capacity to follow a large number of steps, sometimes steep. Orange, bear with me here...for our love of communication, to share experience and knowledge, to positively influence other professionals. The yellow family...for the opening to new knowledge, for significant breakthrough from other fields that challenges us to search for better outcomes and initiate a new cycle of adaptation.

Yes, anaplastologists are skilled in multiple ways, and this assembly is of great pride, and one of the unique and good facets of humankind.

My thanks to all speakers who are advancing the anaplastology field through their speaking contributions. I also want to thank the generous sponsors, Creaform, Technovent, Pixologic, Smooth-On and our Platinum sponsor Panthera Dental for their support. Thank you to everyone who contributed to the success of this conference. My final thoughts are for you, the attendees – deep thanks for your invaluable human energy which will, again, at this day and age of growing robotics, make many unplanned positive interactions that will help unite anaplastologists and forward the profession.

Welcome to the magnificent Old French Capital, Quebec City!

Gaston Bernier, dmd, FADQ Dental Oncologist and Researcher IAA President Elect

Program Chair Welcome

Dear Conference Participants, Colleagues and Friends,

As Conference Chairman, I warmly welcome you to the 32nd annual IAA Conference in Quebec City, one of UNESCO most beautiful cities in the world. It has been my privilege to follow the superior educative value presented at IAA events and the positive stimulation for the past ten years. We are deeply grateful to all people who have built this organization, some I cherish personally and have tirelessly contributed to the vitality of anaplastology.

Sponsors

Platinum Sponsor

Panthera Dental

Headquartered in Quebec, Canada, Panthera Dental is a world leader in CAD/CAM implant solutions and dental sleep appliances. Designing, developing, manufacturing and marketing high-level dental restoration solutions, mandibular advancement devices, and related products using superior quality materials and an advanced CAD/CAM process.

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.

Silver Sponsors

Creaform

Creaform develops, manufactures, and sells 3D portable measurement technologies and specializes in engineering services. The company offers innovative solutions, such as 3D scanning, reverse engineering, quality control, non-destructive testing, product development, and numerical simulation (FEA/CFD). Its products and services cater to a variety of industries, including automotive, aerospace, consumer products, heavy industries, health care, manufacturing, oil and gas, power generation, and research and education.

Along with its headquarters and manufacturing operations in Lévis, Quebec, Creaform operates innovation centers in Lévis and Grenoble, France, and has direct sales operations in the United States, France, Germany, Italy, Spain, Brazil, China, Japan, Thailand, Korea, and Singapore.

Creaform is a unit of AMETEK Ultra Precision Technologies, a division of AMETEK Inc., a leading global manufacturer of electronic instruments and electromechanical devices, with annual sales of \$4.3 billion.

Pixologic, Inc.

ZBrush sets the industry standard for digital sculpting. Its features enable you to use customizable brushes to shape, texture and paint virtual clay in a real-time environment that provides instant feedback. When you use ZBrush you'll be working with the same tools used by film studios, game developers, toy/collectible makers, jewelry designers, automotive/aviation designers, illustrators and artists the world over. www.pixologic.com

Smooth-On

Established in 1895, Smooth-On, Inc. is a leading manufacturer of silicone rubbers, polyurethane rubbers and plastics, rigid and flexible urethane foams, epoxies, polysulfide rubbers, adhesives, coatings, release agents and other material technologies. Our production facility is located in Macungie, Pennsylvania marking the third time the company has moved its operations in its 120th year history.

Technovent

Technovent Limited was acquired in 2007 by MBI (Wales) Limited at which time its base of operations was relocated from Leeds to South Wales.

This move has allowed the Directors a more hands-on approach to Technovent's day to day activities, focusing on solidifying market share in UK and growth of the company overseas.

As such, Technovent is now the UK's leading supplier of its own-brand specialist maxillofacial prosthetic materials and its MagnaCap magnetic retention system.

Welcome RECEPTION

Board List/Contents

President Pattii Montgomery

Vice-President Gaston Bernier, DMD, FADQ

Vice President Elect Megan Thomas, MS, CCA

Immediate Past President Suzanne Verma, MAMS, CCA

Secretary Roberto Fanganiello, B.Sc, PhD

Treasurer Rodrigo E. Salazar Gamarra, DDS

Directors: Andrew Etheridge CCA, CFo Kuldeep Raizada, PhD, BCO, BADO, FAAO

Committee List Louise Desmeules Annie Laverdière

If you are registered to participate in the Pre-Conference Course Panthera Dental program, please meet in the lobby of Hotel Chateau Laurier no later than 1:50 pm to secure bus transportation.

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.

Join us from 6:00 – 8:00 p.m. as we kick off the IAA's 32nd Annual **Educational Conference!**

All conference attendees are encouraged to join us for this event.

Pre-Conference Course Attendees Transportation Notice

IAA Conference Program May 2–5, 2018

Wednesday, May 2, 2018

Pre-Conference Course Programming

9:00 am – 5:00 pm	Exhibitor Set up
9:00am – 10:00am	PEEL 3D in the Anaplastology World with Creaform – Session #1 IMPORTANT NOTE: This event is FREE to attend, but you MUST pre-register. Limited spaces available. First come, first served. Registrations for this will only be accepted until April 18, 2018.
10:00 am – 11:00 am	PEEL 3D in the Anaplastology World with Creaform – Session #2 IMPORTANT NOTE: This event is FREE to attend, but you MUST pre-register. Limited spaces available. First come, first served. Registrations for this will only be accepted until April 18, 2018.
11:00 am - 1:00 pm Pre-Conference Workshop: Discovering the New ZBrush 2018 with Pixologic	
2:00 pm – 5:00 pm	Offsite Technology Center Visit at Panthera Dental IMPORTANT NOTE: This event is FREE to attend, but you MUST pre-register. Limited spaces available. First come, first served. Registrations for this will only be accepted until April 18, 2018.
5:00 pm – 5:30 pm	Poster Set Up
6:00 pm – 8:00pm	Welcome Reception and Poster Session

Thursday, May 3, 2018

Scientific Session and Workshop: Day 1 Session Theme: Team Approach & Challenges in Facial Reconstruction

7:15 am – 8:00 am	Light Breakfast for All Attendees
8:00 am – 8:05 am	President's Welcome
8:05 am – 8:15 am	Conference Chair Welcome
8:20 am – 9:00 am	KEYNOTE <i>The CAD-CAM IBS Implant, a Uniq</i> Yvan Poitras, DMD
9:05 am – 9:20 am	Prosthetic-centered Multidisciplina Oro-facial Defect: A Case Report Jay McClennen, AOCA, CCA, CF1
9:25 am – 9:40 am	Lessons Learned: When Plans Don Suzanne Verma, CCA and Dr. Jorge
9:45 am – 10:00 am	Trouble Shooting with Ocular Pros Kuldeep Raizada, PhD, BCO, BAD
10:05 am – 10:20 am	Retrieval of Two Broken Gold Scre or "Un-SCREW THAT!" David Morrison, CCA
10:20 am – 10:40 am	Coffee Break in Exhibit Area
10:45 am – 11:25 am	KEYNOTE Advanced Jaw Reconstruction: Digita John Wolfaardt, BDS, MDent, PhD
11:30 am – 11:45 am	Tissue Piercing-Retained Auricular Gregory G. Gion, MMS, CCA, BO
11:50 am – 12:05 pm	The History of Maxillofacial Prosth Anat Sharon, DMD, MSc, MHA
12:05 pm – 1:05 pm	LAA Box Lunch
1:05 pm – 3:05 pm	Sponsor Learning Workshops – free • Using ZBrush 2018 within an Ana
3:30 pm – 5:00 pm	IAA Optional Social Outing

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Friday, May 4, 2018

Scientific Session and Workshop: Day 2 Session Theme: Anaplastology Advanced Skills

7:30 am – 9:00 am	IAA Business Meeting & Membership Breakfast – Members Only; Light Breakfast for All Attendees
9:00 am – 9:05 am	Announcements
9:05 am – 9:45 am	KEYNOTE - The Art and Technology of Film Special Effects, CJ Goldman
9:50 am – 10:05 am	Brief Sponsor Introductions
10:10 am – 10:25 am	Is Epithetic Brand Identity Made Stronger Through Design? Yvonne Motzkus
10:30 am – 10:55 am	Coffee Break in Exhibit Area
10:55 am – 11:10 am	Contemporary Methods and Materials Used to Problem Solve in Prosthetic Fabrication and Development, Andrew Etheridge, MFA, CFo, CCA
11:15 am – 11:30 am	Patient's Perspectives for Facial Epithetic Rehabilitation, Anne-Marie Riedinger, CCA
11:35 am – 11:50 am	A Case Series of Patients Treated with Digitally Designed Patient Specific Abutments: Early Results, Lindsay McHutchion, MS, BSc
11:55 am – 12:10 pm	When Analogue Technology Enables Modern Digital Technology: Making a Penile Impression for Innovative Treatment of Non-Invasive Penile Brachytherapy, David Morrison, CCA
12:15 pm – 1:45 pm	Lunch on Your Own and New LAA Board Meeting
1:45 pm – 1:55 pm	Announcements

Session Theme: A Look to the Future, Science and Anaplastology

2:00 pm – 2:35 pm	KEYNOTE – Transplantation of Human Skin Engineered in the Laboratory: Achievements from Clinical and Preclinical Research, Julie Fradette, Ph.D.
2:40 pm – 2:55 pm	Regeneration Medicine in Treating Oral Side Effects of Cancer Therapy, Mark S. Chambers, DMD, MS
2:55 pm – 3:15 pm	Coffee Break in Exhibit Area
3:15 pm – 3:30 pm	Artificial Intelligence and Machine Learning in Medical Imaging and Medicine, Jonathan Boivin, Ph.D.
3:35 pm – 3:50 pm	The Top 10 Treatment and Management Uncertainties in Head and Neck Cancer, Akhila Regunathan, BFA, MS
3:55 pm – 4:10 pm	3D Printed Medical Devices: An Overview of Regulatory Considerations, Oliver Marcotte
4:15 pm – 4:30 pm	New Perspectives on Accessible 3D Technologies for Anaplastology, Rodrigo E. Salazar Gamarra, DDS
4:30 pm – 4:45 pm	Closing Remarks
6:00 pm – 9:00 pm	LAA Banquet

Saturday, May 5, 2018

9:00 am – 12:00 pm	Special Effects Makeup in Film & Post-Conference Workshop with
	CJ Goldman is a prosthetic makeup films such as 300, X-Men Apocalyp for Best Achievement in Makeup in
	The Saturday workshop will involve makeup, created especially for the L sculpture, moldmaking, creating the will bring a model of the finished m prosthetics. He will answer question might transfer to the field of anapla
	The workshop gives will give a very It will also show the attendees man their practice.

c Television CJ Goldman

up artist with over 20 years of experience. He has worked on a variety of pse, Dawn of the Dead and The Hobbit. He received a Gemini Award in 2005.

e a detailed step-by-step demonstration of an extensive prosthetic aging AA conference. CJ will document and explain the entire process: design, e silicone prosthetics, coloring, hair and eyeballs, and application. He nakeup for members to analyze, along with molds and the uncolored ns on the artistic and technical aspects of the craft and how these aspects astology.

y good insight to how makeup artists create prosthetic makeups for films. In interesting and potentially useful techniques that they can adapt for

IAA Conference Program Abstracts

CONFERENCE PROGRAM: PRE-CONFERENCE COURSE Session 1: Wednesday, 9:00 am - 10:00 am Session #2: Wednesday, 10:00 am - 11:00 am

PEEL 3D in the Anaplastology World with Creaform

Presentation from Creaform of the easy-to-use peel-3d scanner and hands-on workshop led by an anaplastologist where attendees can use the scanner to capture typical anaplastogy shapes and process the scan files through to ready-to-3Dprint results.

CONFERENCE PROGRAM: PRE-CONFERENCE COURSE

Wednesday, 11:00 am – 1:00 pm

Discovering the New ZBrush 2018 with Pixologic

Join the Lead 3D Product Development Manager for Pixologic, Paul Gaboury in this Pre-Conference workshop. Paul will be covering all of the new additions to ZBush 2018, from Sculptris Pro, PolyGroup It, Project Primitive and much more. He will also be showcasing how ZBrush is being utilized in an anaplastology pipeline today with case examples. He will be focusing on how ZBrush can be used to edit scan data, sculpt the necessary details for a patient, prepping models for print, understanding the world scale with in ZBrush and so much more.

CONFERENCE PROGRAM: PRE-CONFERENCE COURSE

Wednesday, 2:00 pm - 5:00 pm

Offsite Technology Center Visit at Panthera Dental

Panthera Dental is proud to invite you to the launch of their new division specialised in anaplastology. During this event, guests will have the unique chance to tour the headquarters and see the 20,000-square-foot milling centre in action A cocktail will be served after your visit.

CONFERENCE PROGRAM: GENERAL SESSION



Anaplastology.

Speaker Yvan Poitras, DMD Insert Here

Speaker Bio

Dr.Yvan Poitras graduated from Université Laval in Quebec City, Canada in 1984. He is attached to the research group in biomechanics/biomaterials at École Polytechnique in Montreal. He is the founder of the Institut Canadien d'Implantologie, a continuing education center exclusive to oral implantology. Very implicated in this field, he shares his time between his exclusive private practice, teaching, giving conferences internationally and research & development in oral implantology. With his rich clinical experience and advanced technologies, Dr. Poitras created a new generation of implant with his partner, Panthera Dental, the CAD-CAM Subperiosteal ImplantTM. This implant is custom made for each individual patient. The design is done virtually from a CT-SCAN and engineered in a titanium block. It is the only effective solution to a precise very frequent diagnosis, the severe vertical atrophy of the posterior crests of the mandible, without any other valid treatment alternatives.

KEYNOTE PRESENTATION The CAD-CAM IBS Implant, a Unique Perspective for Insufficient Bone Anchorage in

Continued on next page..

Thursday, 9:05 am – 9:20 am



Prosthetic-centered Multidisciplinary Approach to Surgical Revision and Prosthetic Reconstruction of an Oro-facial Defect: A Case Report

Speaker Jay McClennen, AOCA, CCA, CFm

Co-Author: Hugh G. Murphy DDS, MS, Glenn Minsley DDS, Sarah Kay Youny Lee, DDS, Brian D. Thorp, MD, Samip Patel, MD, FACS

This clinical case reports on the surgical revision and construction of a combination denture and nasal prosthesis to rehabilitate a patient with a mid-facial defect. The patient was diagnosed with squamous cell carcinoma resulting in the resection of the anterior maxilla and rhinectomy. The patient presented for prosthetic rehabilitation of her mid-facial defect with two initial complicating factors: microstomia and facial asymmetry. To restore esthetics and function, multidisciplinary treatment driven by the definitive prosthetic design was necessary.

An acrylic duplicate of the diagnostic wax prototype of the nasal prosthesis was used as a surgical guide to release and reposition the patient's lower lip inferiorly and laterally to the defect. Surgical revision was effective in treating the patient's microstomia and facial asymmetry which had previously made prosthetic rehabilitation impossible.

Initial dental impressions were made eight weeks after surgery using heavy and medium bodied PVS material and modified impression trays. Custom flexible trays with wax rims were then fabricated. A rigid maxillary denture and a flexible mandibular denture were fabricated. The mandibular denture is made up of rigid acrylic over the load bearing areas with a 70 durometer high consistency silicone encompassing the flanges of the denture. After insertion of the flexible mandibular denture, a rigid lingual plate snaps into place to provide rigidity and support for the denture.

Magnets were placed in the maxillary denture by the anaplastologist and a final facial impression was made. The diagnostic wax prototype of the mid-facial prosthesis was fitted to the master cast and the final wax-up was approved by the patient. The final prosthesis represents a successful rehabilitation of a patient for whom the initial prognosis for rehabilitation was deemed hopeless.

This case report demonstrates the effectiveness of a prosthetic-centered multidisciplinary approach to surgical revision and prosthetic reconstruction of an oro-facial defect; and underscores the importance of multidisciplinary treatment planning and collaboration between anaplastology, prosthodontics and surgery.

Speaker Bio

Starting in 1989, **Jay McClennen** worked as a freelance artist with his own company, Spire Art & Design in Ontario, Canada. Much of his research during that time had been in silicone gel-filled prosthetic appliances with emphasis on natural tissue movement, achieving hyper-realistic results.

His four years of classical education in figurative sculpture at the Ontario College of Art & Design and specialized training in forensic art have led Jay to recreate the human form in the varied, but related fields of film, forensics and medical prosthetics.

In the Hollywood film industry, Jay worked for 17 years with Gordon Smith, President of FXSmith. The team received Emmy and Hollywood Make-up Artist Guild nominations and won Gemini and Saturn Awards. With his skill in forensic facial reconstruction, he provided an invaluable service while in Canada to the Ontario Coroner's Office, local law enforcement, and the rest of the Ontario community by assisting them in putting a face on unidentified human remains. In addition, he has become a pioneer in the field of anaplastology.

Jay's work on medical prosthetics has involved the exploring of new methods and materials for facial and limb prostheses while making advances in custom breast designs. Jay headed and completed a 2 year clinical trial at Toronto Sunnybrook Regional Cancer Center on an innovative custom silicone breast prosthesis of his own design. He is now the Chief Clinical Anaplastologist and owner of The Anaplastology Clinic in Durham NC; the largest full service anaplastology clinic in the country.

Jay has peer reviewed papers published in the Current Oncology Journal, the Canadian Oncology Nursing Journal, the Otology and Neurotology Journal, the Annals of Otology, and the Laryngoscope Journal. Jay has lectured internationally on a variety of topics at professional conferences over the last 15 years. He is an Adjunct Consultant for the Department of Surgery at Duke University Medical Center and an Adjunct Instructor at the University of North Carolina, School of Dentistry in the Department of Prosthodontics.

He is a member of The American Academy of Maxillofacial Prosthetics, The International Association for Identification and The International Anaplastology Association.

Before joining the BCCA Board of Directors in 2016, Jay spent 8 years as an active member of the Board of Directors for the International Anaplastology Association serving as the elected President 2013-2014.

ABSTRACTS

CONFERENCE PROGRAM: GENERAL SESSION



Lessons Learned: When Plans Don't Go as Planned

Speakers: Suzanne Verma, CCA and Dr. Jorge Gonzalez

We are all energized to discuss the positive outcomes, the compliant and content patients, and the ideal anatomical defect that yields an esthetic and functional result. But what about the cases that didn;t go as planned? The implant failures, the problematic wounds that will not remedy after trying every possible solution, and the non-compliant patient; what did we learn from those experiences? This presentation will walk through some of the problems that our team, as surgeon, prosthodontist and anaplastologist has encountered when collectively treating patients with a variety of craniofacial defects. Every unexpected set back was an

opportunity to assess the process, revise treatment plans, and formulate new options for the patient using a team approach. Cases that will be discussed will include a variety of procedures including microvascular free flap reconstruction, various bone grafting techniques and the use of BMP, digital implant planning and intraoperative techniques for implant retained intraoral and facial prosthetic restorations, and the design and fabrication of custom abutments, frameworks, and prosthetic devices.

Speaker Bio

Ms. Verma is Assistant Professor with the Oral & Maxillofacial Surgery Department and Certified Clinical Anaplastologist with the Center for Maxillofacial Prosthodontics at Texas A&M College of Dentistry in Dallas, Texas. 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 experiences include UIC;s Craniofacial Center, The Maxillofacial Prosthetics and Dental Oncology Department at the University of Nebraska Medical Center, The Maxillofacial Unit of Morriston Hospital in Swansea, Wales, UK, and as 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 and Incorporations of advanced technology in craniofacial 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 Past President for the International Anaplastology Association. She has recently been awarded Outstanding Young Alumni at Iowa State University and inducted into Omicron Kappa Upsilon dental honorary society.



Trouble Shooting with Ocular Prosthesis

Speaker:

Ocular Prosthesis or Scleral Shell remains the two main avenues where an individual's facial disfigurement following loss of an eye can be restored. Most of us have a majority of cases which are for ocular prosthesis (almost 70-80%). There are many principles to make an ocular prosthesis or scleral shell around the world for ocularists or anaplastologists; however, everyone faces challenge. This presentation shares the problems that we deal with every day and also possible technical solutions to handle them.

Speaker Bio

Kuldeep Raizada is a Licensed Ocularist in Hyderabad, a Board Certified Ocularist (BCO) from National Examination Board of Occularist's, USA and a Board Approved Diplomate Ocularist (BADO) from American Society of Ocularist's, Fellow of American Academy of Optometry, USA, 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 Medical Devices and IOT for living Intelligence Health. Kuldeep Raizada, is Founder & Director of the International Prosthetic Eye Center since 2010, where he is practicing since 2010. 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. His Passion for Teaching been appreciated by inviting Several Bodies from Asia, Africa and Middle East.

Kuldeep Raizada, PhD, BCO, BADO, FAAO



Retrieval of Two Broken Gold Screw Threads from Bilateral Implant-Retained Auricular Prostheses or "Un-SCREW THAT!"

Speaker: David Morrison, CCA

This presentation offers the unusual clinical problem of when two gold screws failed and broke within opposing seated gold bars and how the pressing issue became one of their safe retrieval without alarming the very sensitive pediatric patient. Presented with a missing screw-head and no ability to engage the remaining threaded screw piece as it was now blank and sitting flush within the gold console, retrieval of the broken part became the prioritized challenge. This

presentation demonstrates the clinical case study to this unusual problem and the practical solution that was devised.

Speaker Bio

David Morrison is one of two Anaplastologists at Sunnybrook Health Sciences Centre, which is Canada's largest veteran hospital, and has worked at the Craniofacial Prosthetic Unit since 1999. David has been a member of the AAA since 1992 and has served on the Board of Directors as Secretary and Director of both the IAA and BCCA. He has presented and published frequently over the years and also been featured on various health news items on TV channels in the Greater Toronto Area. Besides winning two consecutive co-author Judson C. Hickey writing awards, he also won the IAA raffle at the conference in San Antonio, Texas.

CONFERENCE PROGRAM: GENERAL SESSION



KEYNOTE PRESENTATION Advanced Jaw Reconstruction: Digital Domain Impact on the Future of Oral Rehabilitation

Speaker:

Digital technologies have become increasingly adopted in reconstruction of the head and neck. Digital technologies employed include a continuum of imaging, software applications for segmentation and 3D printing, surgical design applications, 3D printers, navigation and robotics amongst others. The presentation will consider and focus on the arrival of these technologies in the surgical design and simulation arena. Advanced digital technologies have caused need to revise the head and neck team workflow for resection, reconstruction and

rehabilitation. This has brought need to radically revise not only the clinical but also the education and training environment. It may be argued that the arrival of this level of digital technology innovation and convergence is unparalleled in the history of head and neck care. This brings considerable challenge to the clinical teams and institutions to accommodate to such rapid evolution in care. Equally, the digital workflow has also produced need to reconsider head and neck team structure and interaction. The digital workflow provides opportunity to considerably reduce treatment times and improve treatment outcomes. Equally, for individual clinicians as well as institutions, determining an appropriate business model becomes fundamental to advanced digital technology deployment. This also heralds the need for regulatory and legal issues to be considered in advanced digital technology deployment. Future innovations include the convergence of a wider variety of technologies in the digital workflow. This already includes navigation, robotics and bioprinting. It may be speculated that this dominant shift to a virtual domain will bring greater emphasis to surgical design and this will occur as integration of planning at a macro, micro and nano level. Further speculation may be that the inevitable shift towards virtual and robotics domains will in time decrease need for use of additive manufactured planning models.

With developments underway and those speculated upon, there is considerable need to develop both clinical and technical knowledge workers with skills to engage advanced digital technologies. This will require digital technology knowledge and skills, educational and training structures, redefining optimal team structure, legal and regulatory frameworks, health economics and other emerging issues. The innovation, emergence, convergence and democratization of technology in head and neck surgery are now an inevitability that provides for a future with great opportunity to improve care. This opportunity includes improvement of treatment options, enhanced quality of care, decreased treatment time and reduced global cost of care. With thoughtful application of digital technology, this will translate into improving outcomes of care for head and neck patients.

Speaker Bio

Dr. Wolfaardt is a Professor Emeritus, Division of Otolaryngology-Head and Neck Surgery, Department of Surgery, Faculty of Medicine and Dentistry, University of Alberta. Dr. Wolfaardt is a Co-founder and past member of the Institute for Reconstructive Sciences in Medicine (iRSM), Alberta Health Services/Covenant Health/University of Alberta. His clinical and research interests have been in the area of Maxillofacial Prosthodontics with particular emphasis in the area of head and neck reconstruction, osseointegration and advanced digital technologies in surgical design and simulation. Dr. Wolfaardt has a special interest in quality management and he initiated the interest and process that led to iRSM registering an ISO9000 quality system for the clinical and research aspects of osseointegration care. Dr. Wolfaardt has published over 110 papers in

John Wolfaardt, BDS, MDent, PhD

refereed journals and contributed to a variety of texts. He has lectured both nationally and internationally on maxillofacial prosthodontic care, head and neck reconstruction, osseointegration, and advanced digital technology. Dr. Wolfaardt has served on Boards of the International College of Prosthodontists, the American Academy of Maxillofacial Prosthetics, the International Society for Maxillofacial Rehabilitation, and the Advanced Digital Technology Foundation (ADT) for Head and Neck Reconstruction. Dr. Wolfaardt is past President of the International Society for Maxillofacial Rehabilitation and the ADT Foundation. Dr. Wolfaardt was awarded Honorary Membership by the Canadian Dental Association in 2011. The Alberta Dental Association and College presented the Award of Excellence to Dr. Wolfaardt in 2013. In 2014, the American Academy of Maxillofacial Prosthetics honored Dr. Wolfaardt with the Andrew J. Ackerman Memorial Award. In 2016, the British Prosthodontic Society awarded Honorary Membership to Dr. Wolfaardt and in 2017 Dr Wolfaardt received the Life Achievement Award of the Edmonton Zone Medical Staff Association.

CONFERENCE PROGRAM: GENERAL SESSION

Thursday, 11:30 am – 11:45 am



Tissue Piercing-Retained Auricular Prosthesis

Speaker: Gregory G. Gion, MMS, CCA, BOCP

Osseointegration of ear prostheses is regarded as the gold standard when lifetime wear of a prosthesis seems inevitable. However, our clinics see many patients who elect not to have their microtia tissue or previous autogenous constructs removed as is typically necessary for bone-anchored prostheses. For many, a slip-over type prosthesis becomes a valuable option.

A case series of slip-over style auricular prostheses is first presented to introduce a variation featuring ear piercings prepared to magnetically attach the silicone ear prosthesis over an unsatisfactory rib-graft reconstruction. This case study follows one patient's progress over four years using this prosthesis. Possible rationale for

selecting this technique may be discussed.

Speaker Bio

Greg Gion is a former Art Scholar (NIU) and certified medical illustrator. He holds BA and BS degrees in these areas and a Master of Medical Science (MMS) degree. Mr. Gion trained in Chicago (UIC), started a facial prosthetics service for Northwestern Memorial Hospital and was staff Medical Sculptor in San Antonio before establishing an independent craniofacial prosthetics practice in Dallas, TX in 1985. Mr. Gion established a second practice in his hometown of Madison, WI in 2005, transferring ownership of the Dallas practice in 2012. He certified in prosthetics in 2013 and earned national accreditation for his Madison facility in 2016. He has served in various roles in the AAA and BCCA and provided training of several professional anaplastologists.

CONFERENCE PROGRAM: GENERAL SESSION



Speaker: Anat (Buller) Prosthetic repl of years. In thi

Prosthetic replacements for oral and facial defects have been around for hundreds of years. In this presentation we will delve into the past: The Egyptian and Babylonian dynasty periods and the Greek and Roman periods. How did they treat missing oral and facial parts? How do we even know this? We will travel back via decades and history, getting familiar with the old-fashioned materials and methods, as well as the aesthetic and functional solutions that were available in those days. We will become familiar with the founders of maxillofacial prosthetics field, and the ancient, but well documented cases that are the basis for our contemporary and daily work. After all, history is an important part of us today....

Speaker Bio

Dr. Anat (Buller) Sharon holds DMD and MSc degrees, from the Hebrew university Hadassah Medical Organization in Jerusalem, where she also completed an internship in Prosthodontics, and in Maxillofacial Prosthetics. She is a certified prosthodontist and maxillofacial prosthodontist, and was senior lecturer at Hadassah Medical Organization, and school of dental medicine. She is a member of the Israeli Society of Prosthodontics, The Israeli Society of Head and Neck Surgery and Oncology and the International Association of Anaplastology. She has published articles in peer reviewed journals and chapter in book, in the field of maxillofacial prosthetics and laser dentistry. Dr. Sharon conducts a special course of Art in Medicine, especially designed for plastic surgeons, in Israel.

Dr Sharon combines latest technologies of prosthetics in her daily practice with face prostheses, for her patients that usually present severe malformations.

Thursday, 11:50 am – 12:05 pm

The History of Maxillofacial Prosthetics

Anat (Buller) Sharon, DMD, MSc, MHA

Thursday, 1:05 pm – 3:05 pm

CONFERENCE PROGRAM: GENERAL SESSION



SPONSOR LEARNING WORKSHOP Using ZBrush 2018 within an Anaplastology Pipeline

Don't miss an opportunity to learn how ZBrush is being used today in an anaplastology pipeline. The Lead 3D Product Development Manager for Pixologic, Paul Gaboury will be demonstrating how ZBrush has become an integrate part to the digital sculpting pipeline for your patients. Paul will be covering various features used by your colleagues today. He will be focusing on the sculpting brushes, Scale Master to specify scaling with in ZBrush, using Projection to transfer details, LIVE Boolean system to create fittings pieces, Prepping models for 3D Printing and much more.

Speaker Bio

Paul is Pixologic's in-house ZBrush expert. He is responsible for developing and enhancing the digital sculpting pipelines at multiple area studios, working with artists ranging from feature animators to toy designers. As part of the Pixologic team, Paul travels to various studios and schools, giving live demos and offering educational and artistic support.



KEYNOTE PRESENTATION The Art and Technology of Film Special Effects

Speaker: **CJ Goldman**

During the last 50 or so years, the art and technology of facial prosthetics has seen important developments in two distinct but interrelated fields: clinical anaplastology and film 'special effects' makeup. Although they might seem very different from one another, both are primarily concerned with physically recreating human features to a high degree of realism. Practitioners in both fields must be highly proficient in sculpture, mold making, color matching, and materials technology. And while clinical anaplastologists and movie makeup artists have tended to stay on their 'sides of the pond', there is a rich history of exchange

between the two fields.

This lecture will discuss the craft of special effects makeup, and its historical connection to clinical anaplastology. It will use examples from the artist own career, detailing the techniques and approaches used to create prosthetic makeups and lifelike replicas. Many of these techniques can be modified for use in clinical work. C.J. will also bring models, molds and other examples of his work for examination and discussion.

Speaker Bio

C.J. Goldman has been an award-winning prosthetic makeup artist for 25 years. He has worked on such films as 'The Hobbit', 'X-Men' and '300'. CJ specializes in realistic prosthetic makeup, sculpture and body replication. He holds a BSc in Biology and a Master's in Science Education.

CONFERENCE PROGRAM: GENERAL SESSION



Is Epithetic Brand Identity Made Stronger Through Design?

Speaker: **Yvonne Motzkus**

Co-Authors:

Kerstin Menzel, Jan, De Cubber, Sabine Toso, Nicolai Adolphs, Max Heiland, Jan-Dirk Raguse

Background

Today, the trend in orthopedic technology is to utilize design for medical aids. Arm prostheses suggest arms that are elaborately designed. Metal loops or leg prostheses with tattoo elements are also more common. The goal is for patients to

develop a self-confident and positive attitude regarding one's injury. Is this possible in the epithetic field?

Objectives and Methods

Theories from two scientists have been put forth and linked together. Mashahiro Mori presents a theory about the perception regarding artificial lifelike objects and suggests that instead of a natural looking hand prosthesis rather one designed and made that looks less life like. Kristof Vaes lays out guidelines in his Doctorate thesis "Product Stigmaticity" that are helpful for the design of medical aids which identify and reduce stigmatic impacts.

Findings/Conclusions

Design elements in the field of epithetic facial rehabilitation are conceivable. Therefore, the "Product Appraisal Modell for Stigma(PAMS)" and "Product Intervention Model for Stigma (PIMS)" by Kristof Vaes are helpful tools. A first project will be presented.

Speaker Bio

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).



Speaker:

Purpose

Materials and Methods Examples of patient cases will be presented. Each will have specific individual complications, approaches and, solutions. Techniques will include high consistency

silicones, multiple durometer and silicone mixing, 3-D design and printing, and aesthetic detailing.

Conclusion

As anaplastologists we approach the design process and definitive fabrication of a prosthetic device in different ways. Pulling from techniques in O&P, as a practicing artist, and the special effects industry, we will discuss materials from various disciplines and their potential uses in our field. It is inevitable that we will encounter unique obstacles in each case we are presented with, but I believe the best way to overcome these obstacles is to have a robust and diverse set of expertise from which to pull in order to achieve the most optimal result.

Speaker Bio

Beginning his prosthetic career as lead technician/lab manager and prosthetic assistant at Del Bianco Prosthetics and Orthotics before meeting Jay McClennen, Andrew has been a team member of The Anaplastology Clinic for over five years. He holds his CCA as well as credentials in the O&P field as a CFo and is currently pursuing a credential as a certified pedorthist. Andrew has been a member of the IAA for the past five years and presently sits as a director on the board. After receiving a Bachelors of Fine Arts from the University of North Carolina at Wilmington Andrew continued his studies in the arts by obtaining a Masters of Fine Art from the University of North Carolina at Greensboro. Both a member of the National Sculpture Society and the Tri-State Sculptor's Guild Andrew continues to advance his artistic career by exhibiting his sculptural works in the gallery setting.

Contemporary Methods and Materials Used to Problem Solve in Prosthetic Fabrication and Development

Andrew Etheridge, MFA, CFo, CCA

Objective is to present critical thinking tactics using various contemporary methods and materials to solve issues in the prosthetic fabrication process.

ABSTRACTS

CONFERENCE PROGRAM: GENERAL SESSION



Patient's Perspectives for Facial Epithetic Rehabilitation

Speaker: Anne-Marie Riedinger, CCA

The reconstruction journey via a facial epithesis is often perceived by the patient as going through an inner war. He will have to conceal with his disfigurement as well as to build coping strategies for every aspect of the reconstruction process.

Friday, 11:15 am – 11:30 am

This presentation is meant to walk into the patient's shoes, to confront the struggles of the patient being dumped in a completely surreal world of health care professionals and, among them, the anaplastologist. How does the patient react from the abstract conception of an ideal prosthesis built in his mind to the final

design and delivery? And how do expectations meet the challenges of medical and/or technical limits?

These issues will be illustrated via patient experiences and cases.

Speaker Bio

Anne-Marie Riedinger is a Certified Clinical Anaplastologist and former President of the IAA (2009-2011), 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 a 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 3D technologies, bone anchored prostheses, medical models and research.

CONFERENCE PROGRAM: GENERAL SESSION



Early Results

Speaker: Lindsay McHutchion, MS, BSc

Midfacial and orbital defects can be technically and biologically challenging to treat prosthetically. A process for digitally designing and manufacturing abutments to address many of these challenges has been developed. Several patients have undergone treatment using these abutments; early follow-up shows patient satisfaction and promising periabutment tissue response. Customization through digital design and manufacture is increasingly prevalent in facial

prosthesis treatment pathways. With increased access to customized components it remains critical to create designs that are biologically appropriate and enable patient adherence to hygiene protocols.

Speaker Bio

Lindsay has been an anaplastologist at the Institute for Reconstructive Sciences in Medicine in Edmonton, AB since 2012. She completed her training though the Biomedical Visualization program at University of Illinois at Chicago after completing an undergraduate degree in Biology at the University of Alberta. Lindsay works with an interdisciplinary team to treat patients with facial prostheses and has a particular interest in integrating technology into the facial prosthetics treatment pathway.

A Case Series of Patients Treated with Digitally Designed Patient Specific Abutments:

Friday, 11:55 am – 12:10 pm

When Analogue Technology Enables Modern Digital Technology: Making a Penile Impression for Innovative Treatment of Non-Invasive Penile Brachytherapy

Speaker: David Morrison, CCA

This presentation offers the unusual challenge posed when obtaining an optimal digital scan of a patient; s penis was unable to be made by another department and was thus stalling the start of a new treatment protocol being developed at Sunnybrook Hospital. When the Craniofacial Prosthetic Unit was approached for advice and presented with their technical problem, the matter of making an

analogue impression and obtaining a digital scan of the resulting cast model with the CPUds equipment instead became the work-around solution. As most Anaplastology presentations are generally head and neck-, somato- and breast-case studies, this unusual case study demonstrates the impression technique of a more unusual body part, offers insights into the relatively rare and potentially devastating issue of penile cancer and also demonstrates the new non-invasive brachytherapy service at Sunnybrook Hospital, resulting in the successful outcome post-treatment.

Speaker Bio

David Morrison is one of two Anaplastologists at Sunnybrook Health Sciences Centre, which is Canada's largest veteran hospital, and has worked at the Craniofacial Prosthetic Unit since 1999. David has been a member of the AAA since 1992 and has served on the Board of Directors as Secretary and Director of both the IAA and BCCA. He has presented and published frequently over the years and also been featured on various health news items on TV channels in the Greater Toronto Area. Besides winning two consecutive co-author Judson C. Hickey writing awards, he also won the IAA raffle at the conference in San Antonio, Texas.

CONFERENCE PROGRAM: GENERAL SESSION



KEYNOTE

Speaker: Julie Fradette, Ph.D.

Skin is our foremost protective layer. It is composed of an avascular epidermis, a thick dermis and an adipose tissue layer (hypodermis). Each of these compartments contributes to essential skin functions including thermoregulation, immunity and tissue cushioning. In addition, skin reveals us to the external world. This is why skin conditions, ranging from cutaneous diseases to acute damage such

as extensive burns can be associated with a heavy psychological burden. For many years now, our group at the LOEX Center of Tissue Engineering has successfully used cells to amplify them in culture and to engineer autologous three-dimensional tissues. Examples of such reconstructed skin grafted to patients suffering from venous ulcers or extensive burn wounds will be presented. In addition, preclinical studies by our group will be discussed, including the production of a reconstructed skin featuring a hypodermis and the development of reconstructed skin enriched in endothelial cells, leading to capillary-like blood vessels stimulating inosculation after implantation. Finally, human reconstructed skin substitutes produced by seeding keratinocytes on the surface of dermis made from adipose-derived stromal/stem cells (ASCs) will establish the usefulness of these postnatal stem cells to complement dermal fibroblasts for skin reconstruction. Globally, skin tissue engineering can contribute to an improved healing for a wide range of skin conditions.

Speaker Bio

Julie Fradette (PhD) is a Full Professor at Université Laval, department of Surgery, Faculty of Medicine. She is a researcher at the Centre LOEX de l'Université Laval, at the research center of the CHU de Québec-Université Laval since 2005. Her research activities focus on adipose-derived stem/stromal cells (ASCs) and their use in regenerative medicine. Her expertise encompasses tissue engineering of skin and various connective tissues including human adipose tissue. During her graduate studies, she studied skin epithelial stem cells for improvement of skin substitutes. Her postdoctoral training at the University of Pittsburgh established that ASCs and adipose tissue can be used for gene delivery. Her research program is now focused on how human mesenchymal cell's potential can be harnessed for tissue reconstruction using cell-based, scaffold-free strategies. She is the director of the ThéCell network for cellular and tissular therapies for the province of Québec, Canada.

Friday, 2:00 pm – 2:35 pm

Transplantation of Human Skin Engineered in the Laboratory: Achievements from Clinical and Preclinical Research



Regeneration Medicine in Treating Oral Side Effects of Cancer Therapy

Friday, 2:40 pm – 2:55 pm

Speaker: Mark S. Chambers, DMD, MS

Co-Author: Jeffrey N. Myers, MD, PhD

Regenerative medicine is a rapidly expanding field that has the potential to treat serious conditions, particularly in patients with unmet medical needs. It starts with the study of human biology in normal and disease states through the use of stem cells in general and adult or pluripotent stem cells in particular. Stem cells have the remarkable potential to develop into numerous different cell types and

serve as the body's primary internal repair system. The innate ability of stem cells to differentiate into other types of cells with specialized functions (blood, brain, bone, or other tissue cells) replenishes and regenerates the body from the effects of metabolic deterioration. This area of human research offers an encouraging future treatment option of oral side effects of cancer therapy, i.e., osteoradionecrosis (ORN), mucositis, dysgeusia. Stem cells are distinguished from other cell types by two important characteristics: 1) They are unspecialized cells capable of continually renewing themselves through cell division and 2) they have the potential to develop into many different cell types of the body. Given their regenerative potential, stem cells offer new opportunities for treating diseases and therapy-induced side effects.

The utilization of Regenerative Medicine and Stem Cell Therapy in the treatment of osteoradionecrosis focuses on the principles of how stem cells aid in repair and differentiation into new cell types. Stem cells are precursors to various cells in our body. If damaged cells can be replaced, vascular compromise improved, and degeneration reversed, then the ravaging effects of bone collapse in ORN may be impacted. Treatment of ORN, especially advanced ORN, is a challenging clinical issue, and there is no well-established large animal model for basic and clinical studies. Recent studies outside MD Anderson have demonstrated that bone marrow mesenchymal stromal cells (BMMSCs), which are multipotent postnatal stem cells with the capacity to differentiate into osteoblasts, chondrocytes, adipocytes, and neural cells, have therapeutic potential in irradiated tissues. This presentation will center on the development of a Regenerative Medicine Program and focus on global stem cell research specific to the oral morbidity, ORN.

Speaker Bio

Dr. Chambers received his doctorate of dental surgery from the University of Louisville (U of L) School of Dental Medicine, as well as a Master of Science in neurobiology at U of L School of Biological Sciences. He completed his combined prosthodontic training at U of L and the VA Medical Center, Louisville, as well as maxillofacial prosthodontics and oral oncology training at MD Anderson Cancer Center. Dr. Chambers received a five-year American Cancer Society Research Fellowship Award in the Department of Head and Neck Surgery and started his career at MD Anderson as a Junior Faculty Associate. Dr. Chambers is a tenured Professor, Past vice-Chair of Compliance and Regulatory Affairs (HNS), and Director of the HNC-Core Research Program (HNS) with a secondary appointment in the Department of Radiation Oncology. Dr. Chambers is an oral oncologist and clinical research investigator with a focus on developing novel therapeutic approaches to the oral sequelae of cancer therapy. He is the Chief and Medical Director of the Section of Oral Oncology and serves on numerous institutional committees, such as the Chair of the Institutional Review Board 5 (IRB 5), Chair of the External IRB Oversight Monitoring Committee, Executive IRB 3 member, past Chair of the Graduate Medical Education Committee, and Past Chair of the Clinical Research Committee (CRC), to name a few. Additionally, he has served organized medicine in various leadership roles throughout his career and continues to impact research-driven patient care through NIH and industry-sponsored protocols. In addition to his academic career, he and his wife, Rose Marie, have an equine operation in breeding, training, and showing American Saddlebred horses on their ranch in Montgomery, Texas. 28 | The Unique Color of Anaplastology

CONFERENCE PROGRAM: GENERAL SESSION



Artificial Intelligence and Machine Learning in Medical Imaging and Medicine

Speaker: Jonathan Boivin, Ph.D.

In the last ten years, artificial intelligence has gone through a tremendous growth and development phase with the advent of powerful computers and handheld devices. From face recognition and autocorrect to video games and netflix recommendations, machine learning algorithms are now a part of our everyday life. The next developpement could be toward the most profitable industry of all, as billions are invested by healthcare and technology companies in medical applications for artificial intelligence. The ability to learn from large amount of data, and then recognize and combine multiple parameters from images, health metrics, and clinical information, will now allow decision making applications to assist diagnostic and treatment planning. This will lead to rapid and major changes in the practice as new tools are available, as well give rise to new legal and ethics issues. This talk will provide the basic concepts of machine learning, explore some of the applications in healthcare and raise some of the questions that will need to be discussed thoroughly as changes have already begun.

Speaker Bio

Jonathan Boivin has graduated in the engineering physics program at Université Laval, then completed a biomedical engineering master at the Université de Montréal. He just finished a physics PhD in 2016 at Université Laval and is now working as a medical physicist at the radiation oncology department of CHU de Québec - Université Laval. Throughout his researches on x-ray dose measurement and instrumentation in radiology, he has monitored to the rapid growth and development of artificial intelligence tools in medical imaging and healthcare.

Friday, 3:15 pm – 3:30 pm

Friday, 3:35 pm – 3:50 pm

CONFERENCE PROGRAM: GENERAL SESSION



The Top 10 Treatment and Management Uncertainties in Head and Neck Cancer

Speaker: Akhila Regunathan, BFA, MS

Head and neck cancer (HNC) is constantly evolving in it etiology and epidemiology. Survival rates for head and neck cancer patients are improving; patients diagnosed with some types of HNCs are younger and living longer. However, it has been shown that research in this field does not always address the areas that matter most to patients and clinicians.

The treatment and management of HNC patients should include the perspective and input of patients, caregivers/family members and clinicians treating these

patients if we are to appropriately inform future research in this area. A survey was designed, using the James Lind Alliance approach, to identify uncertainties in this area and was sent to patients, caregivers/family members and clinicians. These uncertainties were then organized into themes and ranked by the HNC Priority Setting Project Steering Committee comprised of patients, caregivers/family members and clinicians/researchers, bringing the uncertainties from 818 to 77, and then again ranked to a short list of 27. This short list was then finalized at an all day workshop where participants reached consensus on the top ten research priorities for HNC. These top ten priorities included research questions on prevention, screening, treatment and quality of life. The inclusion of patients and caregivers/family members was successful and vital in identifying research priorities for head and neck cancer.

Speaker Bio

Akhila completed her Master of Science through the Biomedical Visualization Program at the University of Illinois at Chicago in 2003 specializing in anaplastology. In 1997, she completed her Bachelor of Fine Arts in Art Education at the University of Illinois at Urbana-Champaign with a major in the teaching of english. Akhila went on to pursue coursework in the sciences at Benedictine University and became a research assistant at Argonne National Laboratory in Illinois before combining her interests in art and science and enrolling in the master's program. As an anaplastologist, Akhila creates custom facial prostheses for patients who are missing parts of their facial anatomy due to disease, trauma, or congenital conditions.

Akhila began working at iRSM in 2004. Her focuses include patient-oriented research, implementing digital technology into the treatment of facial prosthetic patients, patient advocacy and recruitment, and patient quality of life.

3D Printed Medical Devices: An Overview of Regulatory Considerations

Speaker: **Oliver** Marcotte

3D printing is a technology providing a whole new range of possibilities in medicine. We see many applications of this technology arise every year: from anatomical models and hearing aids to surgical guides, patient-specific external prostheses and orthopedic implants. In this context, it is relevant to ask what are the regulatory considerations related to these products, who are most of the time patient-specific? This presentation will propose some elements of answers to this question. It will give an overview of current and future applications of 3D printing in medicine and provide a summary of the regulatory framework for these devices in USA, Canada and Europe. It will also discuss the classification of medical devices and quality system requirements related to their manufacturing. Finally, it will take a look at the highlights of the most recent FDA guidance on technical considerations for additively manufactured medical devices.

Speaker Bio

Olivier Marcotte holds a master's degree in mechanical engineering. He has held the position of research and development officer at the Center de recherche industrielle du Québec (CRIQ) since 2009. As such, he participated in the establishment of a metal additive manufacturing laboratory for industrial applications in 2014. This laboratory aims to familiarize Quebec companies with this technology of the future by providing access to the equipment and expertise of CRIQ staff. For over a year, Marcotte has been working on the development of a new additive manufacturing laboratory that will be dedicated to the medical applications of 3D printing. This laboratory, created in partnership with a group of local hospitals, will aim to develop new applications of 3D printing in the medical field, be it custom metal implants, cutting guides, anatomical models or other applications of interest.



CONFERENCE PROGRAM: GENERAL SESSION



New Perspectives on Accessible 3D Technologies for Anaplastology

Friday, 4:15 pm – 4:30 pm

Speaker: Rodrigo E. Salazar Gamarra, DDS

New technologies and innovation in equipment, software and the way we make them interact is a never-ending path. Likewise, when we continuously search better quality with more efficiency and improved treatment outcomes for our patients.

The common situation to be solved worldwide is the learning curve for new practitioners and efficiency in our conventional procedures. Also, in unprovided systems, also the access to this supportive technology is also a necessity. Affordable

solutions have been demonstrating to be a feasible alternative to high cost methods.

The path until we can finally 3D print the final prosthesis is each time closer. In the while, we have to permanently challenge actual methods under a scientific methodology. That is why our team has been testing the limits of monoscopic photogrammetry, free and open source software, add-on creation and 3D printing.

Speaker Bio

Dr. Salazar is a Peruvian dentist, Specialist in Oral Rehabilitation, Master in Science., and student of Ph.D. in maxillofacial prosthodontics at the Paulista University with Luciano Dib.

He is a Maxillofacial Prosthodontics in the NGO "Mais Identidade" in São Paulo, Brazil, and advisor on the same topic of OREMA Foundation in Santiago de Chile.

During his master, he developed the +ID Technique, which uses affordable technologies for maxillofacial prosthodontics and Anaplastology, including smartphones, free software, and low-cost 3D printers. This methodology gained global awareness from academics and also media, which translated his work in dozens of languages of 37 countries. Today there are 7 countries which use this methodology.

He serves as Treasury of the International Anaplastology Association (IAA), Former Secretary of IAA and is Secretary of the Latin American Society of Maxillofacial Prosthodontics and Former Board Member of the Peruvian Society of Prosthodontics. Also, member of the ISMR and the International College of Prosthodontics.

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

He received different awards of "Merit of Honor" and other 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 SESSION



Speaker: CJ Goldman

CJ Goldman is a prosthetic makeup artist with over 20 years of experience. He has worked on a variety of films such as 300, X-Men Apocalypse, Dawn of the Dead and The Hobbit. He received a Gemini Award for Best Achievement in Makeup in 2005.

The Saturday workshop will involve a detailed step-by-step demonstration of an extensive prosthetic aging makeup, created especially for the IAA conference. CJ will document and explain the entire process: design, sculpture, moldmaking, creating the silicone prosthetics, coloring, hair and eyeballs, and application. He will bring a model of the finished makeup for members to analyze, along with molds and the uncolored prosthetics. He will answer questions on the artistic and technical aspects of the craft and how these

aspects might transfer to the field of anaplastology.

The workshop gives will give a very good insight to how makeup artists create prosthetic makeups for films. It will also show the attendees many interesting and potentially useful techniques that they can adapt for their practice.

Speaker Bio

C.J. Goldman has been an award-winning prosthetic makeup artist for 25 years. He has worked on such films as 'The Hobbit', 'X-Men' and '300'. CJ specializes in realistic prosthetic makeup, sculpture and body replication. He holds a BSc in Biology and a Master's in Science Education.

Special Effects Makeup in Film & Television

CONFERENCE PROGRAM: POSTER PRESENTATIONS

Comparison of Conventional and Digital Workflows as Applied to an Orbital Prosthesis

Presented by Jennifer Hunt

The fabrication process of maxillofacial prosthetics has a come a long way since its inception, but over the past few decades that process has largely stayed the same despite technology becoming increasingly more advanced. Maxillofacial prosthetics through conventional means requires considerable time and skill that could benefit from incorporating technology, but many anaplastologists do not have the time or resources to explore digitizing their workflow themselves. To address this issue, this project will compare both the advantages and limitations of a conventional workflow with a digital one. This will be done by fabricating a total of four orbital prostheses, a certified anaplastologist and a medical illustration student each making one conventionally and one digitally, and then collecting and evaluating data in categories of fabrication time, accuracy, fit, cost, aesthetics, and patient?s satisfaction. Previous research in this area overlooks the possibility of a person without advanced anaplastology training to implement a digital workflow to fabricate prostheses of an acceptable quality, which is why the work of both experienced and inexperienced people will be compared. The goal of this project is to develop a resource to guide anaplastologists looking to increase efficiency of their workflow to increase patients access to care. For medical illustrators interested in entering the field, the knowledge of how to merge technology with their artistic skills in a clinical setting opens up more job opportunities.

About the Presenter

Jennifer Hunt is a second year graduate student in Augusta University's Medical Illustration program. She is originally from Southern California. She earned her bachelor?s degree in Biological/Pre-medical Illustration from Iowa State University. She considers herself extremely lucky to have discovered the medical illustration field in college while majoring in biology at the time. She soon changed majors and fell in love with the field. Her career plans after graduation are still uncertain, but she is interested in further exploring the areas of 3D animation and prosthetics.

Scripting Toward Improved Efficiency of MMIS Applications: Our Clinical Experience

Presented by Rosemary Seelaus, BS, MAMS, CCA

Co-Authors: Linping Zhao, David Morris, Lee Alkureishi & Pravin Patel

(1) Pediatric Plastic & Craniofacial Surgery, Shriners Hospitals For Children-Chicago

(2) The Craniofacial Center, Division of Plastic, Reconstructive and Cosmetic Surgery, University of Illinois at Chicago

Three-dimensional medical image-based virtual, surgical treatment simulation and planning (VSSP/VTSP) continues to gain popularity with surgeons and anaplastologists, and has become the gold standard for select procedures and applications. VSSP/VTSP involves multiple steps, beginning with data acquisition (computed tomography, magnetic resonance imaging and the like) and culminating in the fabrication of a custom guide, implant or prosthesis through additive manufacturing processes such as 3D printing. However, the key component is the software used for modeling, design and simulation of the specific procedure or device. The capabilities of the VSSP/VTSP system are essentially limited to the functionality of such software.

Since 2005, we have utilized Mimics Innovation Suite, or MMIS (Materialise, Leuven, Belgium) for simulation of a variety of surgical procedures. We have found it to be an excellent platform, providing a broad range of functions and basic tools for the virtual planning of both "routine" procedures and innovative or unusual treatments. With increasing experience, we have recognized the potential for improvements in both workflow and efficiency.

Scripting via both MatLab and Python have been explored in recent years. In response to the MMIS Scripting Challenge we, in collaboration with the engineering team at Materialise, developed a number of Python Scripts to improve workflow, and implemented these recently. Three typical workflows were selected: (1) pre- and postoperative outcome study in orthognathic surgery, (2) cranial vault implant design, and (3) aural prosthesis design. Our experiences in learning Python, exploring both the capabilities and limitations of MMIS v.20 in terms of scripting, and modifications to our workflow are presented and illustrated with case studies.

Our experience suggests that Python scripting is a technically applicable approach to improving the efficiency of established workflows in MMIS software for VSSP/ VTSP. We continue to explore the capabilities of the system in an effort to further refine this process.

About the Presenter

Rosemary Seelaus is senior anaplastologist at the UI Health Craniofacial Center. Ms. Seelaus' clinical practice specializes primarily in the treatment and fabrication of implant-retained facial prostheses and virtual surgical planning for facial reconstruction using 3D imaging & printing technologies. She maintains an emphasis on ensuring that an informed patient and family is central to defining treatment goals and successful outcomes. A leader in her field, Ms. Seelaus has lectured extensively worldwide on her clinical and technology expertise and has mentored graduate and postgraduate students both domestically and abroad. Her primary research interests are central to the clinical application of 3D digital and coloring technologies to define best practices and treatment outcomes for surgical and prosthetic reconstruction and rehabilitation of the head and neck. She has served on multiple professional, scientific, and editorial boards and committees for both research and clinical endeavors.

Smartphone Camera Viability for Skin Color Measurement

Presented by Rosemary Seelaus, BS, MAMS, CCA

Co-Authors: Jonathan Butts & David E. Morris

Purpose/Aim: Accurate color measurement is essential to the plastic surgeon desiring optimal aesthetic outcomes. Variability of human perception and environmental lighting conditions limit observation or swatch-based methods, leading to use of spectrophotometers as the gold-standard for accurate color matching. Advances in smartphone camera technology and the utilization of deviceindependent color-spaces may provide alternatives for color matching in resource-limited settings, without significant calibration or processing. In this study, we investigated the utility of a consumer smartphone camera in comparison with a spectrophotometer for the evaluation of skin color in a variety of illuminant environments.

Materials and Methods: Silicone disks pigmented to match a representative skin sample from a fair-skinned subject were created using spectrophotometer measurements and color formulation software in standard fashion. Skin and disk samples were measured with the spectrophotometer and imaged with a smartphone under three illuminant conditions: D65 (simulated daylight), incandescent,

and white fluorescent TL84. Average pixel RGB values of each silicone and skin sample were calculated from each smartphone image. Samples were converted from

sRGB to Lab color-spaces, and Euclidian distances (dE) were calculated between matched skin and silicone Lab samples. A two-way one sided t-test was performed to assess equivalence between mean spectrophotometer and smartphone values. A magnitude threshold of 1.0 was chosen as a maximally-stringent, just noticeable difference in fair-skinned individuals.

Results: Images taken under D65 were statistically equivalent to the spectrophotometer. Those under incandescent and fluorescent were not, with incandescent providing lower, and fluorescent higher, dE values.

Conclusions: Equivalence between smartphone and spectrophotometer under simulated sunlight agrees with recommendations for indirect sunlight as an ideal condition for color matching. Although incandescent and fluorescent narrowly-missed equivalence, their precision suggests utility if measurements are taken in consistent lighting conditions or for applications with greater tolerances.

About the Presenter

Rosemary Seelaus is senior anaplastologist at the UI Health Craniofacial Center. Ms. Seelaus' clinical practice specializes primarily in the treatment and fabrication of implant-retained facial prostheses and virtual surgical planning for facial reconstruction using 3D imaging & printing technologies. She maintains an emphasis on ensuring that an informed patient and family is central to defining treatment goals and successful outcomes. A leader in her field, Ms. Seelaus has lectured extensively worldwide on her clinical and technology expertise and has mentored graduate and postgraduate students both domestically and abroad. Her primary research interests are central to the clinical application of 3D digital and coloring technologies to define best practices and treatment outcomes for surgical

- and prosthetic reconstruction and rehabilitation of the head and neck. She has served on multiple professional, scientific, and editorial boards and committees for both research and clinical endeavors.

Surgical Planning for Implant Placement and Soft Tissue Contour in Prosthesis-Driven Reconstruction

Presented by Lindsay McHutchion, BSc, MA

Implant placement planning has been an essential part the treatment pathway for implant retained facial prostheses for many years. Further development of digital design for facial prostheses allows for desired prosthetic outcomes to be simulated at the outset of treatment. Digital simulation of the prosthesis, retentive elements and implant positions concurrently allows for the planning of optimal prosthetic outcomes. Surigucal guides for both implant placement and soft tissue reduction can be created based this simulation. This technique is particularly helpful in orbital reconstructions where significant debulking is required to create space for retentive and ocular components in order to avoid creating a prosthesis that appears proptotic.

About the Presenter

Lindsay McHutchion has been an anaplastologist at the Institute for Reconstructive Sciences in Medicine since 2012. She completed her training at University of Illinois at the Craniofacial Center through the Biomedical Visualization Master's program.

The Use of Dermaflage In The Anaplastology Profession

Presented by Nancy Hansen and SSgt Ethan Hart

Dermaflage is a medical grade silicone, topical filler that is intended to be used by people to conceal recessed scars and hide rough skin. Skin shades are selected from a color tone chart and supplied in an applicator, mixing tips and texture pad. People can quickly and easily apply the concealer to skin imperfection as a part of their daily routine. This material has been used to touch up prosthesis and may have additional applications for the anaplastologist.

About the Presenters

Nancy A. Hansen holds the position of Certified Clinical Anaplastologist for the United States Air Force practicing at San Antonio Military Medical Center and Air Force Postgraduate Dental School, Texas. She has over 30 years of experience in the fabrication of complicated intraoral/ extraoral prostheses. Ms. Hansen is on the academic staff and teaches maxillofacial prosthetic fellows, prosthodontic residents and dental laboratory technicians.

SSgt Ethan R. Hart is originally from Williamsport Pennsylvania. In 2011 he joined the United States Air Force and is currently stationed at Lackland Air Force Base. SSgt Hart is the noncommissioned officer (NCOIC) in charge of the maxillofacial prosthetic dental laboratory at San Antonio Medical Military Center and the Air Force Postgraduate Dental School. Ethan is a Certified Dental Technician (CDT) specializing in dental implants, he also fabricates maxillofacial prostheses for department of defense personnel and wounded warriors. Ethan is a recent graduate from the Navy Medicine Professional Development Center; course #8765 Maxillofacial Prosthetics C-School in Bethesda, Maryland.

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SAVE THE DATE JUNE 2019

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