

Hunter Dawson

University of Louisville
Dr. Bryan T. Harris,
Director

"The Digital Patient: the Missing Link to Smile Design, Virtual Articulation, and CAD/CAM Restorations"

Currently utilized digital workflow processes for diagnosis and treatment of dentate patients with worn dentitions focus upon traditional esthetic and functional results but continue to rely upon the use of time-consuming analog diagnostic and laboratory steps. A technique is presented that eliminates the need for analog diagnostic and laboratory steps through the use of low-dose CBCT radiologic scans at the treatment centric relation position. This permits an efficient all-digital workflow.

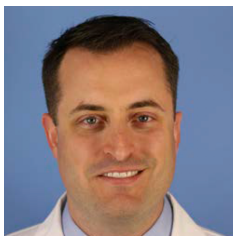


Keaton Forrester

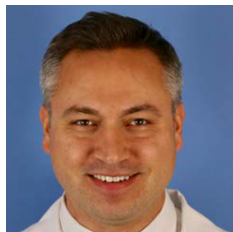
USAF Prosthodontics
Dr. Cade A. Salmon
Director

"Treatment Planning for Kelly's Combination: a Case Report"

Kelly's combination syndrome is a well-known occurrence resulting from years of a maxillary complete denture opposing natural mandibular anterior teeth. Severe manifestations can greatly compromise support, stability, retention and esthetics of the planned prostheses. This presentation will illustrate the treatment planning process incorporating traditional methods with state of the art digital tools including 3D tomographical imaging, stereophotometry, and 3D optical scanning.



Harrison Gordner



Farzan Pouranfar

USAF Prosthodontics
Dr. Cade A. Salmon
Director

"Quantitative 3D Photometric Analysis of Facial Soft Tissue Contour in Maxillary Implant-Supported Prosthesis Design and the Detachable Flange Technique."

The maxillary fixed-detachable implant-supported prosthesis presents a unique design challenge. Elimination of the flange permits adequate oral hygiene access but, at the same time, compromises facial support at rest and during animation. A quantitative volume differential assessment method is presented that utilizes 2D and 3D photography to establish the requirement for a flange in the definitive prosthesis design. Next, a technique is demonstrated whereby a stable, detachable support flange can be created for the fixed-detachable prosthesis that permits removal for hygiene access.

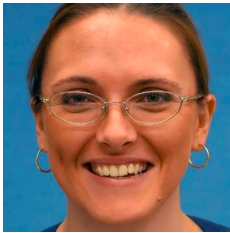


Neil Griseto

UTHSC San Antonio
Dr. Stephan J. Haney,
Director

“CAD/CAM Fabrication of Custom Fossa Inserts for the TMJ Articulator Using a Novel Mandibular Motion Recording Method”

A novel device is used to record mandibular motion. The physical tracings are scanned and software is used to interpret this recording and reproduce the motion using digital models created from scans of casts. Rendered condylar elements are used to produce a fossa pattern that can be manufactured using the CAM process of choice. These fossa inserts are then attached to the housings on a TMJ articulator to govern the motion of mounted casts.



Angela Gullard

UTHSC Memphis
Dr. David Cagna,
Director

“Rotational Path RPDs: Esthetic Replacement of Anterior Teeth”

The rotational path removable partial denture (RPD) is a viable treatment option when anatomic and esthetic limitations restrict the use of fixed restorations in the anterior region. With adherence to sound design principles, a rotational path RPD utilizes undercuts that are inaccessible with conventional RPDs. This case report discusses the diagnosis, treatment planning, clinical approach, and laboratory methods that must be considered to optimally restore an anterior defect with a rotational path RPD.



Pi-Yu Hsu

University of Washington
Dr. Van Ramos,
Director

“A Digital Workflow Combining 2D and 3D for Analysis, Esthetic and Functional Design”

Digital dentistry applications continue to advance. Intraoral digital scanning is a reliable method for creating virtual dental models. However, extraoral evaluation, which is crucial for a comprehensive esthetic evaluation, is not well integrated at this time. A novel methodology is presented that combines esthetic analysis with the planning and designing of the provisional prosthesis using a modified digital workflow. Presented is an effective method for utilization of 2D digital photography-based smile analysis in a 3D software to achieve a functional design, maximizing the diagnostic value of digital analysis.



Katelyn Kuric

University of Louisville
Dr. Bryan T. Harris,
Director

“Integrating Hinge Axis Approximation and Prosthetic Treatment Simulation in a Virtual Patient for Treatment with CAD-CAM Immediate Dentures: A Clinical Report on a Microstomic Patient”

A fully digital approach to the creation of a virtual patient in order to fabricate complete removable dental prosthesis (CRPD). This approach enabled us to digitally identify the patient’s hinge axis in order to rotate the mandible and increase occlusal vertical dimension. The wax up was completed and “tried in” on the patient’s virtually simulated face created by the soft tissue scan to verify incisal edge position. The prosthesis were then milled and subsequently delivered.

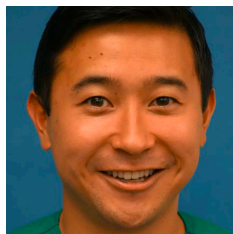


James Lee

University of Minnesota
Dr. Heather J. Conrad,
Director

"Mandibular Implant-Supported Fixed Prosthesis: A 30 Year Success Story"

An 86-year-old woman donated her body to the University of Minnesota Anatomy Bequest program after successfully wearing a 5-implant-supported mandibular fixed detachable prosthesis for 30 years. The original mandibular prosthesis was in use for 26 years and opposed a maxillary complete denture. In 2012, a new set of maxillary and mandibular prostheses was fabricated due to fracture of the mandibular framework distal cantilever. No other significant treatment was completed until her passing in 2016. Implant stability using resonance frequency analysis was measured prior to sectioning. The study results demonstrate this treatment modality can function with minimal complications for the long-term.

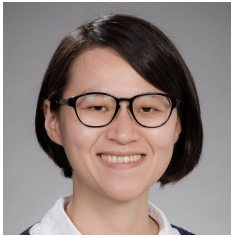


Aaron Omura

UTHSC Memphis
Dr. David Cagna,
Director

“Practical Considerations for Implant-Assisted Removable Partial Dentures”

Initiation of therapy in the absence of a healthy and stable prosthodontic foundation risks unintended and suboptimal treatment outcomes. For conventional removable partial denture (RPD) therapy, consideration must be given to interactions between the soft and hard tissues available to support and stabilize planned prostheses. The strategic addition of implants to the partially edentulous foundation can improve the support, comfort, and esthetics of an RPD, resulting in elevated patient satisfaction and greater therapeutic success. This presentation will focus on diagnosis, 3-dimensional treatment planning, clinical management, laboratory execution, and maintenance that must be considered in order to obtain optimal results with implant-assisted RPDs.



Chinchun "Jean" Peng

University of Washington
Dr. Van Ramos,
Director

"Setting up the Worn Dentition Patient for Interdisciplinary Treatment Using a Digital Protocol"

When a patient with worn dentition presents for treatment, the interdisciplinary team must come together for treatment planning and treatment. The purpose of this presentation is to show how the digital protocol applies to the treatment of the orthodontic-restorative patient. This presentation will compare 3 different methods to obtain a diagnostic orthodontic set up based on either a manual or digital wax up.



Ben Sutter

"Digital Occlusion: Quantifying Force and Timing"

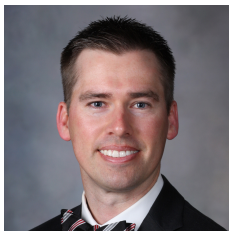
Digital occlusal analysis brings objective occlusal contact force measurement, and tooth contact time sequence display capability in 3/1000ths of a second, to clinical dentistry. Over the last 33 years, the T-Scan computerized occlusal analysis technology has been evolving making today's T-Scan 9 to be highly precise, repeatable, and accurate. The T-Scan allows the clinician to "see" occlusion in ways analog occlusal indicators cannot. This table clinic will illustrate advantages digital occlusion holds over analog occlusal indicators.



Mark Yamamoto

"Missed Open Bite Tragedy"

A patient presented with only one occlusal contact (#2 with #31) in her whole mouth and a slip and fall accident made it worse. The result was damage to the right condyle and chipped out pieces of the glenoid fossa. She had arthritis with an anterior open bite and back and shoulder problems. All she wanted was to have more teeth touching. With proper diagnosis and conservative occlusal therapy, the before and after CONE BEAM CT SCANS of the case show healing with positive bony changes. Her ability to masticate was greatly increased, her head tilt went upright, her spine got straightened and her shoulders went back. Physical therapists & chiropractors say that this can occur when the facial & neck muscles are relieved of harmful tension. This table clinic goes through the diagnosis and treatment step by step.



Richard Zavada

"Complex Prosthodontic Management of Patient with Pituitary Giantism with Implant Supported Fixed Dental Prosthesis: A Case Presentation"

There are few articles addressing pituitary gigantism and dental rehabilitation in the literature. Full-arch, implant supported prosthetics treatment plans are complex. At the beginning of the full mouth reconstruction for our patient, there were many management concerns and hurdles beyond normal treatment. For pituitary gigantism, it was found that all of the normal challenges to restore form and function are amplified. This case report identifies unique modifications to the treatment series, material decisions, occlusal schemes, and philosophies.

Mayo Clinic
Dr. Thomas Salinas,
Director