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$\sim 143 \mathrm{RD}$ CHICAGO DENTAL SOCIETY

MIDWINTER MEETING

The respected leader in scientific dental meetings

SCIENTIFIC PROGRAM: FEBRUARY 21 - 24, 2008 EXHIBIT DATES: FEBRUARY 22 - 24, 2008

COURSE F31A FUNCTIONAL ESTHETICS—TAKING THE TIME TO DO IT RIGHT MICHAEL MALONE, DDS FRIDAY, FEBRUARY 22, 2008

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CHICAGO DENTAL SOCIETY MIDWINTER MEETING COURSE EVALUATION

SUBJECT:		DATE:	ATTENDEES:	
PLEASE RATE YOUR SPEAKER AS TO: Excellent	Good	Fa:	Poor	N/A
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OVERALL EVALUATION OF THE PROGRAM 4	ω	2	_	0
SHOULD THIS SPEAKER BE INVITED FOR FUTURE MEETINGS? YES	NO O			
WHAT TOPICS INTEREST YOU FOR THE FUTURE?				
COMMENTS (use reverse if you need additional space):				
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NAME (REGUESTED BUT NOT REGUIRED—FEASE PRINT):				

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Mike Malone, D.D.S., F.A.G.D. 300 Doucet Road Lafayette, Louisiana 70503

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www.mikemalonedds.com mike@mikemalonedds.com

Review of Smile Design Concepts

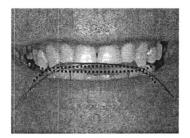
- Jeff Morley, DDS, Jimmy Eubank, DDS
- Ronald Goldstein, DDS, David Garber, DMD
- Maurice Salama, DDS
- AACD Guide to Accreditation Criteria

Smile Line



 The smile line is an imaginary line along the incisal edges of the maxillary anterior teeth which, in an ideal situation, mimics the curvature of the superior border of the lower lip when smilling.

Reverse Smile Line



 A reverse smile line is when the incisors are shorter than the cuspids resulting in a reverse curve.

Lip Line (Opper)



- The lip line refers to the inferior border of the upper lip during smile formation.
- The lip line is generally considered ideal when the position approximates the gingival line of the maxillary teeth.

Acceptable Lip Line

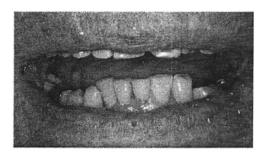




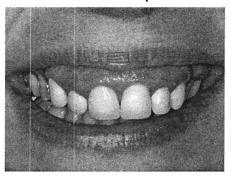
 The lip line is generally considered acceptable when the gingival line is within 2 mm above or below this line.

Alania ac toloni

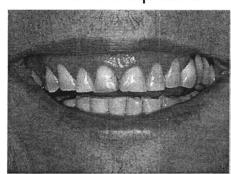
Deficient Lip Line



Excessive Lip Line



Uneven Lip Line



Tooth Reveal – Relaxed Lip "M" Position





- Young people show 2-4 mm of the central incisors when lips are releved.
- Mature or older people show less or even none of their incisors when lip is relaxed.

Tooth Reveal – Broad Smile "E" Position





- · Maximum extension of the lips in a broad smile.
- Intercommisure line is a straight line through the corners of the mouth.
- A youthful smile typically shows 75-100% tooth reveal below this line.
- A lower percentage of reveal ages the smile.

Incisal Length



- Typical or average central incisor length is 1/16 of the facial height. (Use Trubyte Tooth Size Indicator)
- The average central incisor is 10-11 mm long.
- The central width is typically 75-80% of the length.

Incisal Length





- The Smile Line, in conjunction with phonetics, function, and esthetics, will determine the incisal edge position and in most cases, the central incisor length.
- Incisors that are too short may be lengthened incisally or gingivally, depending on lip line position, maximum reveal, and phonetics.

• The interface between the two maxillary centrals should be perpendicular to the incisal plane and parallel to the midline of the face.

Facial Midline



 The facial midline is best determined by a line connecting the center of the nasion with the philtrum of the lip.

Midline Deviation





- If the incisive papilla is not in line with the philtrum, a true midline deviation exists.
- A midline deviation that does not bisect the papilla is more noticeable than one which does not bisect the philtrum.

Horizontal Plane



- It is very important for the horizontal plane of the maxillary teeth to be perpendicular to the facial midline.
- A properly aligned, or "corrected", face bow is the best way to communicate the dental horizontal plane.

If eyes are equal, can use inter pupillary line,

Axial Inclination

- There should be a progressive increase in the mesial inclination of the maxillary teeth from central to canine.
- Even relatively small deviations in this element can produce noticeable problems with the smile.

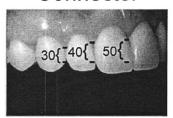
Incisal Embrasures



 The incisal embrasures of the maxillary anteriors should display a natural, progressive increase in size from the central to the canine.

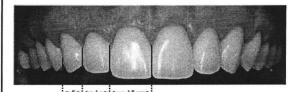


Connector



- The contact area, or connector, can be defined as the area between two teeth where they appear to touch.
- The "50-40-30" rule, as defined by Jeff Morley, is when the connector between the centrals is 50% of the central length, 40% between central and lateral, and 30% of the central length between lateral and canine.

Principles of Golden Proportion



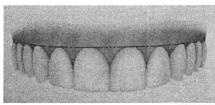
- The suggested mathematical ratio of the <u>apparent</u> widths of the anterior teeth when viewed from the front is 1.6:1:0.6. Dr. David Garber suggests using a range of 1:1.3 to 1:1.9.
- Many clinicians prefer to develop proportions by eye rather than use a strict mathematical proportion.

Buccal Corridor



- Buccal corridor refers to the area distal to the maxillary canine visible during the smile.
- It can be affected by lip shape and position, arch width, bicuspid position, and the color and value of the posterior teeth relative to the anteriors.

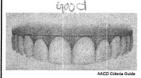
Gingival Height and Position



AACD Criteria Guid

 The gingival position of the centrals should be symmetrical and relatively similar to the cuspid's gingival height.

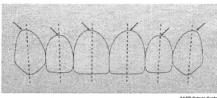
Gingival Height and Position





 The lateral incisor's gingival height should be the same, or preferably, slightly less than the centrals (never higher).

Gingival Shape and Zenith



- AACD Criteria Guide
- The gingival shape of the maxillary lateral incisors and the mandibular incisors should be a symmetrical half-oval or half-circle with the zenith in the center.
- The zenith of the maxillary centrals and cuspids should be distal to their long longitudinal axis.

Shade Progression



- The maxillary central incisors have the highest value of all the teeth.
- · The laterals have a similar hue, but slightly lower value.
- The canines have greater chroma and the lowest value of all the maxillary teeth.
- First and second bicuspids are similar in chroma and value to the lateral incisors.

Tooth Morphology



 Line angles are found on the proximals of the anterior teeth when the facial surface turns into the inter proximal area.

Tooth Morphology



- The outline form is the shape of the tooth when you connect the mesial and distal line angles with incisal and gingival lines.
- Outline forms can be square, ovoid or tapering, or shapes in between.

Labial Anatomy





AACD Critoria Guide

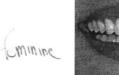
- Labial anatomy is affected by the lobular development of natural teeth.
- The central incisor is developed from three lobes, the lateral from two and the canine from one lobe.

Factors That Suggest Age



- Shorter, more square teeth give the impression of an older smile (centrals usually wear the most).
- Age and the resulting wear also create sharp and angular corners and smaller incisal embrasures.
- · Teeth also darken with time.

Factors That Suggest Gender





- · Lateral incisors are the most gender related teeth.
- · Feminine Lateral Incisor:
 - Narrow gingival width
 - Divergent proximal line angles
 - Rounded incisal outline form
 - Rounded incisal corners
 - Concave gingival embrasures

Factors That Suggest Gender



Mascoline.

- Masculine Lateral Incisor:
 - Wide gingival width
 - Almost as wide as central
 - Parallel proximal line angles
 - Flat incisal edge
 - Sharp incisal corners
 - Convex gingival embrasures

Factors That Suggest Personality



- · Shape of cuspids
 - Pointed cuspids are aggressive; rounded suggest passivity.
 - A flat cuspid profile is also more aggressive.

The Smile Design Appointment



- The comprehensive cosmetic patient is appointed to make decisions necessary for the development of their pre-planned esthetic wax-up.
- We use photographic guides such as Bill Dorfman's <u>The Smile Guide</u> and any photos the patient may bring.

The Smile Design Appointment



 A direct composite resin mock-up can be used instead of a laboratory wax-up.

The Smile Design Appointment





 Cosmetic computer imaging is another communication tool for helping your patient make smile design decisions.

The Smile Design Appointment





- Explain concept of designing first, then implementing change at the preparation appointment with their "prototype" provisional restorations.
- Prototype provisionals give your patient a chance to experience their smile changes before the final restorations are even started.

Buy AACD DOOK guide to Acreditation Criteria

Thirteen procedures to insure an ideal restoration-Dawson

- 1. Do a thorough examination.
- 2. Visualize your end result.
- 3. Outline the treatment in the proper sequence.
- 4. Make sure the tissues are healthy before beginning final restorative procedures.
- 5. Prepare the teeth meticulously.
- 6. Magnify your vision.
- 7. Verify the accuracy of your impression.
- 8. Verify the accuracy of your dies.
- 9. Verify bite records, both in the mouth and on the models.
- 10. Fabricate good temporaries.
- 11. Provide the technician with all the information he or she needs to make a masterpiece.
- 12. Verify the accuracy of lab procedures.
- 13. Check the accuracy of the restorations before placing them in the mouth.

ESTHETIC WAX-UP CHECK LIST

Mike Malone, DDS, FAGD 300 Doucet Rd. Lafayette, LA 70503

Patient	
Due date	
Tooth Numbers	Type of Restoration
Central incisor size. Lengthmm	
2. Move the midline align	mm Rightmm Left
3. Free gingival lineMaintain posit	ionModify positionmm apically.
4. Incisor shape or Smile Guide	·
5. Horizontal planeChange to coi	ncide with desktop (mounted models).
Leave as is.	
Other modifica	ations
6.Occlusal planeDevelop ideal plan	ne with plane analyzer.
Leave as is.	
7. Vertical dimensionPosition at the	e level of centric occlusion.
Open vertica	lmm anteriorly, orposteriorly.
8. Buccal corridor Change to ideal	lizeLeave as is.
9. Photos included:Face1:2 Smil	e1:2 RetractedImaged
10.Other:	

Name:				
Date:	•			
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Cent Stops 1-2-3-4-5-6	7 9 0 10 11 12	12 14 15 16		
			W. J.	
Restorations	Bite/Rec	Slides	Models	
Porc	Preps	Before	Opposing	
PFM PM	Temps	Stumpf	Temps U L	
PFM	Preps/Temps	Temps	Trial	
Gold	Facebow	Smile	Essix NG	
		Shade	Bleach	
		After		
Die Model Out Trin		inident		
Opposing Model Mounted		Specialty		
Mounted Case Out		The second of th	Karam	
Case Returned		Excel		
Checked By Doctor		Haupt		
Time Units				

Smile Design & Advanced Cosmetic Provisional Fabrication Mike Malone, DDS, FAGD

Crown Form Fabrication

- Paint mock-up model with Liquid Foil Separator and blow dry
- Place Copyplast material in MiniStar Machine
- Turn on heating element and wait until light turns green
- Place model of mock-up in lead beads approximately 3 mm from gingival line
- Pull heating element down over Copyplast material and heat for 60 seconds
- Pull heating element up, quickly place softened Copyplast onto model and engage lever. Let cool for 60 seconds
- Remove Copyplast from model and trim with scissors, leaving 2-3 mm.beyond gingival margin
- Place trimmed Copyplast back onto model and place into beads, leaving only teeth exposed (leave tissue stops for full arch cases)
- Remove blue film from 2.5 mm Splint Biocryl and place on MiniStar machine
- Turn on heating element, wait until light turns green
- Pull heating element over Biocryl and heat for 75 seconds
- Pull up heating element and quickly place softened Biocryl onto model with Copyplast, engage lever and cool down for 120 seconds
- Remove Copyplast from inside Biocryl
- Trim Biocryl with the Almore Soft Line Trimmer and an acrylic bur to the gingival margin

Smile Design & Advanced Cosmetic Provisional Fabrication Mike Malone, DDS, FAGD

Advanced Provisionals

- Take bonding hydrocolloid/alginate impression of prepared teeth.
- Pour up impression with Snap Stone. Allow to set for five minutes.
- Remove the model from the alginate.
- Clean up and try crown form on model. Draw red pencil line at crown form margin.
- Paint two coats of Rubber Sep onto preps, drying each layer (should look like die spacer).
- Coat entire model with thin layer of Liquid Foil Separator and dry.
- Place Triad enamel, light, and medium into crown form for desired result.
- Place loaded crown form in Zip-Lock bag and place in hot water bath at 175 degrees for two
 minutes.
- Place loaded crown form (with Biocryl reinforcement) onto prep model. Press all the way to red line.
- Secure with rubber band and cure in Triad oven for four minutes.
- Separate provisionals between cuspids and first bicuspids on both sides with diamond disk (for full arch provisionals).
- Gently remove provisional from model, being careful not to break the provisional. (You **must** trim excess from lingual of veneers before removal)
- Cure in Triad oven for 2-4 minutes after painting inside of temps with glycerin (air barrier).
- Trim excess material close to margins on the facial and lingual using preferred acrylic burs.
- Trim and remove excess interproximal from the gingival embrasures using modified green wheel.
- Refine margins using favorite burs.
- Remove internal flash and any existing bubbles.
- Place back on model and repair any deficient margins.
- Transfer to the patient adjusting any other undercuts as necessary.
- Refine facial and incisal embrasures using the Vision Flex 140.
- Polish with medium pumice and Shurshine on the lathe or paint with Palaseal and light cure.
- Polish interproximals and embrasures with a Robinson wheel and Shurshine.

LA Academy of Continuing Dental Education in cooperation with LSU School of Dentistry

Cosmetic Dentistry Continuum – Level I

BONDING SEQUENCE By Dr. Jimmy Eubank

- 1.) Clean tooth Remove prototype cement and sandblast while protecting the tissue and adjacent teeth. Rinse and remove all grit.
- 2.) Apply superoxyol with microbrush to stop tissue seepage and clean tooth, leave 10 to 15 seconds then rinse.
- 3.) Etch 37% Phosphoric scrub with microbrush for 10 to 15 seconds
- 4.) Rinse and dry Verify proper etch pattern.
- 5.) Apply Liner Bond 2V (A & B Primer) (add Activator if bonding to composite build-up) scrub with microbrush for 20 seconds then let set for 20 seconds.
- 6.) Gently air dry until nothing wiggles this will leave isolated surface areas that are not glossy.
- 7.) Apply Photo Bond plus Activator to tooth and blow off excess (no pooling) establishes a uniform glossy surface.
- 8.) Light cure 10 40 seconds depending upon <u>light source</u>.
- 9.) Apply Photo Bond mixture to sandblasted, etched restoration and blow off excess.
- 10.) Place restoration with the appropriate resin cement, verify seat and light cure.

MIKE MALONE, D.D.S., F.A.G.D.

Recommended Instrumentation and Materials

ANESTHESIA

Septocaine Septodont (800) 872-8305 N-Tralig syringe Miltex (general supplier)

X-tip Anesthesia Delivery System X-tip Technologies, LLC (800) 682-9847

BLEACHING

ZOOM! Chairside WhiteningDiscus Dental (800) 422-9448ZOOM! Weekender KitDiscus Dental (800) 422-9448Nite White Excel 2Discus Dental (800) 422-9448Sodium perborateSultan Chemist (800) 637-8582SuperoxolUnion Broach (800) 221-1344

Crest Professional White Strips Supreme Dental Supply Co.

BURS, POLISHING DISCS, CUPS, POINTS, ETC.

Vision Flex Strips (diamond) Brasseler (800) 363-3838 Composite polishing cups (pink/blue) Cosmedent (800) 621-6729 Vision-Flex diamond disk (934-180) Brasseler (800) 363-3838 Enamelize (composite polishing) Cosmedent (800) 621-6729 Flexi Disc Cosmedent (800) 621-6729 Flexistrip Cosmedent (800) 621-6729 Neo Diamonds 0916.8C (crown prep) Microcopy (800) 235-1863 Microcopy (800) 235-1863 Neo Diamonds 0710MS (resin prep) Nova diamonds 856-016 short (veneer prep) Gnathos (800) 325-0285 Microcopy (800) 235-1863 Neo Diamonds 1923M (football shape) Neo Diamonds 2042C (Wheel) Microcopy (800) 235-1863 Neo Diamonds 3512.8VF (flame, finishing) Microcopy (800) 235-1863 Dialite Ultra Porcelain Resurfacing System Brasseler (800) 363-3838

CEMENTS/BONDING AGENTS

Clearfil Liner Bond 2V and Photobond
RelyX Unicem
Synal Type II Class I (temporary)
Insure Porcelain Bonding System
Prevue Try-In Paste
Da Vinci Formula 1 Veneer Cement

Kuraray America (800) 879-1676
3M ESPE (800) 634-2249
Caulk (800) 532-2855
Cosmedent (800) 621-6729
Cosmedent (800) 621-6729
Cosmedent (800) 621-6729

COMPOSITE RESIN/MATERIALS AND INSTRUMENTS

CosmeCore Cosmedent (800) 621-6729 GlasSpan GlasSpan (800) 280-7726 Plastic Filling Instruments Cosmedent (800) 621-6729 Porcelain Etch 9.5% (intraoral) Ultradent (800) 552-5512 Renamel (microfill, creative color, hybrid) Cosmedent (800) 621-6729 **RSVP Temporary System** Cosmedent (800) 621-6729 Showoff mockup resin Cosmedent (800) 621-6729 Ultra Etch 35% Phosphoric Acid Ultradent (800) 552-5512 Palaseal Heraeus Kulzer (800) 343-5336

IMPRESSION MATERIAL

Alginator II Cadco (800) 833-8267

Blue Mousse bite registration (super fast set) Parkell (800) 243-7446

Identic Syringable Bonding Hydrocolloid DUX Sales (800) 833-8267

Identic Dry Conditioner DUX Sales (800) 833-8267

Hydrocolloid—Red Backloading Syringe Material DUX Sales (800) 833-8267

Identic Extra Fast Set Alginate DUX Sales (800) 833-8267

Prep Wet DUX Sales (800) 833-8267

LAB

Essix thermoforming vacuum sheets Raintree Essix (800) 883-8733

MiniStar Great Lakes Orthodontics (800) 828-7626 Soft Liner Trimmer Almore International (800) 547-1511

Greenstone Wheel (for temps) Brassler (800) 363-3838

Liquid Foil Separator Great Lakes Orthodontics (800) 828-7626 Press-form sheets Ellman (800) 835-5355 Rubber Sep George Taub Prdts. (201) 798-5353 Snapstone Whipmix (800) 626-5651 Triad VLC provisional material Dentsply/Trubyte (800) 786-0085 Hotstikz System Dental Ventures of Am. (800) 228-6696 Surfactant DUX Sales (800) 833-8267 Copyplast 1 mm Great Lakes Orthodontics (800) 828-7626 Biocryl 3 mm Great Lakes Orthodontics (800) 828-7626 Primarock Whipmix (800) 626-5651 Whip Mix Vacuum Mixer Whipmix (800) 626-5651 Gypsum Hardner Whipmix (800) 626-5651 Triad 2000 Light Curing Unit Dentsply (800) 786-0085

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MISCELLANEOUS

Accufilm II (red and black) Parkell (800) 243-7746 Artus occlusal registration strips Artus (201) 568-8865 Visco-Stat/Astringent X Ultradent (800) 552-5512 Crown Remover Brasseler (800) 363-3838 Dental Health Program Mike Malone, DDS (337) 989-1268 Lares High Speed Hand Pieces Lares (800) 347-3289 Surgical Telescopes Designs for Vision (800) 345-4009 Fiberoptic Headlight (glasses mount) Orascoptic (800) 369-3698 Video Glasses (i – Glasses) I-O Display Systems (800) 339-5287 V-I-P-2 Radiographic Aligner Up-Rad Corp. (800) 327-8879 Prep Start (micro abrasion) Danville Enginneering (800) 827-7940 Artex Articulator Jenson (800) 243-2000 Jenson (800) 243-2000 Artex Facebow Dento-Surg Unit (Radio Surgery) Ellman (800) 835-5355 Vari-tip Electrode Ellman (800) 835-5355 Lab for Provisional Templates Smile-Vision (800) 634-3480

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Nikon D-200 Digital Camera System PhotoMed International (818) 908-5368 DP-6 Wireless Intraoral Camera RF System lab. (888)219-0475

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A valuable resource for anyone interested in a better understanding of the components of fine smile design and improved ability to self-critique their clinical casework.

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