TREATMENT PLANNING

• **Models**
  – Measure arch length vs. tooth mass
  – Check Bite
• **Cephlometric analysis**
  – Evaluate jaw relationships
  – Evaluate how teeth relate to jaw
• **Photographs**
  – Evaluate smile
  – Evaluate how full face is
  – Evaluate profile
• **Panoramic x-ray or FMX**
  – Overall health of dentition and mouth
  – Root structure of teeth
TREATMENT PLANNING FOR THIS COURSE

- Student dentists will be given a step by step treatment planning outline
- Guide for model analysis for tooth mass vs. arch length
- Cephalometric analysis using a step by step manual.
- Guidelines for when you do a case non-extraction vs. extraction.
- For extraction cases, we present a guideline on which teeth to extract.
MODEL ANALYSIS

• Measure width of mandibular anteriors and bicuspids (top photo)

• Measure arch length from mesial of first molar to first molar (bottom photo)
CEPHLOMETRIC ANALYSIS

• Trace anatomical features
• Plot points on Ceph
• Measure appropriate angles and lengths
• Compare measurements to norms to determine skeletal and dental trends and growth patterns
ONCE YOU HAVE YOUR DIAGNOSIS AND HAVE PRESENTED TO THE PATIENT, YOU ARE READY TO START TREATMENT
INITIAL TREATMENT APPOINTMENT (START-UP)

BRACKETS, MOLAR BANDS AND WIRE
BRACKETS CAN BE PURCHASED IN KITS

- Easier to keep up with
- Everything numbered and in order
- Brackets are color coded
- Bicuspid brackets have arrows on them to show which way the teeth will tip
- Brackets can be purchased with jigs in place. Jigs help position the bracket at the correct height from the incisal edge of the tooth.
Wires can be purchased pre-formed

- Pre-formed means easier and less chair time.
- Wire comes several sizes measured from canine to canine.
- Sizes determined by distance between cuspid loops
- Even with pre-formed wire, some chair-side bending will be required.
- Wire also comes in spools and straight pieces.
BRACKET PLACEMENT

• Isolate teeth
• Etch teeth
• Paint on primer and adhesive
• Place bracket using jigs to center brackets and make sure correct height from incisal edge
• Allow to cure or light cure
• Remove jigs
PLACING BANDS

- Use preformed bands with welded brackets from kit for first molars
- Gauge size by looking at band on model
- Try on tooth
- Cement in place
BEGINNING STAGE 1

• Band first molars (or can use bondable tubes)
• Bracket anterior teeth
• Normally we do not bracket premolars at the initial appointment. Premolars are bracketed if there is no need to correct vertical or horizontal discrepancies, or if an open bite exists.
PLACING WIRES FOR STAGE 1
The Tip Edge Technique
(Overview)
STAGE I
OBJECTIVES

• Align anterior teeth to eliminate crowding or spacing
• Vertical correction of deep or open anterior bites
• Horizontal correction of anterior overjet or underjet
WIREs

• Stage I:
  – .016 Stainless Steel w/ cuspid circles
  – .016 Looped Wire
  – .014 or .016 Nickel Titanium Wires

• Stage pre-II; pre-III:
  – Existing .016 Stainless Steel Wire
  – .016 Niti Wire

• Stage II:
  – .022 Stainless Steel Wire w/ cuspid circles

• Stage III
  – .022 Stainless Steel Wire w/ cuspid circles
  – .021 X .025 Rectangular wire
  – .014 Niti wire for horizontal slot
STAGE I WIRES (.016 stainless steel)

- The standard wire for stage I is an .016 stainless steel wire.
- This wire is thin enough to thread through crowded teeth, yet strong enough to open the bite with anchor bends.
- Wire is placed in round tube on molar bracket.
STAGE 1 WIRES
(.016 NiTi)

• Nickel Titanium Wires:
  – Used as an auxiliary wire with a standard .016 wire in crowded cases.
  – May be used in cases that allow a passive start such as open bite cases or when bite is already open.
  – NiTi wire will not open or close a bite since you cannot place a bend.
STAGE 1 WIRES
(.016 Stainless steel looped)

- Used for crowded cases where forward movement of anterior teeth is acceptable (usually non-extraction cases)
- Allows for rapid unraveling of teeth
- The loops act as springs, tipping the teeth out facially
- Are rigid enough to put bite opening bends in wire and with class 2 or 3 elastics
- Most commonly used on lower teeth, but can be used on the upper also.
- Change to .016 SS wire after initial alignment of anteriors.
STAGE I WIRES
(.016 Looped wire continued)
OVERVIEW OF STAGE I MECHANICS
STAGE I-BITE OPENING

• In front of each molar tube, an anchor bend (usually about 30°) is placed
• When wire is placed in the mouth, it lies passively in the vestibule.
• Engaging the wire in the anterior teeth places intrusive forces on the anterior teeth and extrusive forces on the molars, which opens the bite.
• Patient wears a 2 oz. class II elastic which pulls the upper teeth distolingually and the mandibular teeth mesiofacially.
CONTINUE STAGE I UNTIL ALL STAGE I OBJECTIVES ARE ACCOMPLISHED

USUALLY 3-12 MONTHS DEPENDING ON SEVERITY OF CASE AND PATIENT COOPERATION
END OF STAGE 1

• No anterior rotations or spacing
• End to end anterior relationship
  – Correct horizontal anterior relationship
  – Correct vertical anterior relationship
STAGE PRE-II
STAGE PRE-II OBJECTIVES

• Bracket Bicuspsids
• Use existing .016 archwires through rectangular tubes
• Place bite opening sweeps instead of anchor bends
STAGE II
OBJECTIVES

• Only required if posterior space needs to be closed (most extraction cases).
• Close posterior space
• Midline correction
• Correct Molar relationships if necessary
• Maintain Stage I objectives
STAGE II
( Technique )

• Bracket bicuspids
• Place an .022 round stainless steel wire
• Measure and place e-links to close space
ACCOMPLISHING STAGE II OBJECTIVES

- Use e-links (an elastic strand with circles on each end) that goes from the first molar to cuspid circles on the wire
- Elastic pulls teeth together
- Can increase or decrease the e-link force to correct midlines.
- Can move molars forward to correct relationships
STAGE II

• .022 Wires with sweeps
• E-links from molar to cuspid
• Maintain class 2 elastic wear
• Maintain anterior relationships
STAY IN STAGE II UNTIL ALL STAGE II OBJECTIVES ARE ACCOMPLISHED

(Normally takes about 3 months)
STAGE PRE-III
STAGE PRE-III OBJECTIVES

• Bracket Bicuspids
• Maintain stage one objectives
• Place existing .016 wire in rectangular molar slots
• Check for molar rotations
STAGE PRE-III
STAGE III
OBJECTIVES

• Maintain stage I & II objectives
• Upright (Tip and Torque) roots
• Lock in bite
• Usually takes 6 to 9 months depending upon amount of root alignment needed.
Stage III
(Forces)

- At end of stage I and II, roots will be tipped
- In stage III, we will upright and torque the teeth.
STAGE III WIRES

• Can finish in a .022 round wire from stage II if no torquing is needed
• Use .021 x .025 rectangular wires in most cases
• For maximum tip and torque use rectangular wire with NiTi auxiliary in horizontal slot of Plus bracket
STAGE III
(Technique)

• UPRIGHTING ROOTS
  – Can use .022 wires with Sidewinder springs
  – Can also use Niti wire in horizontal slot of bracket

• ROOT TORQUE
  – Use .021 x .025 rectangular wire
  – Must use NiTi wire in horizontal slot for maximum torque
STAGE III
(Side-winders)

- Used to upright individual tooth
- Fits in vertical slot in bracket and engages wire
- Self-limiting due to straight groove in bracket, so cannot over upright tooth.
- Can become dislodged and lost by patient, slowing treatment
- Clockwise and counter clockwise versions available
STAGE III
(Horizontal slot in bracket)

• Only in the **Tip-edge plus** brackets (we will use these in class)
• Niti auxiliary wire goes in horizontal slot of bracket
• Cleaner look and patient cannot lose the wire
• Slightly more difficult at service appointment if wires must be removed
• Can use sidewinders with the Tip-edge plus bracket also
STAGE III
(Horizontal slot continued)
STAGE III

(Examples of stage III procedures)