

# **The challenges and successes of dental student engagement at a dental school without a postdoctoral residency program.**

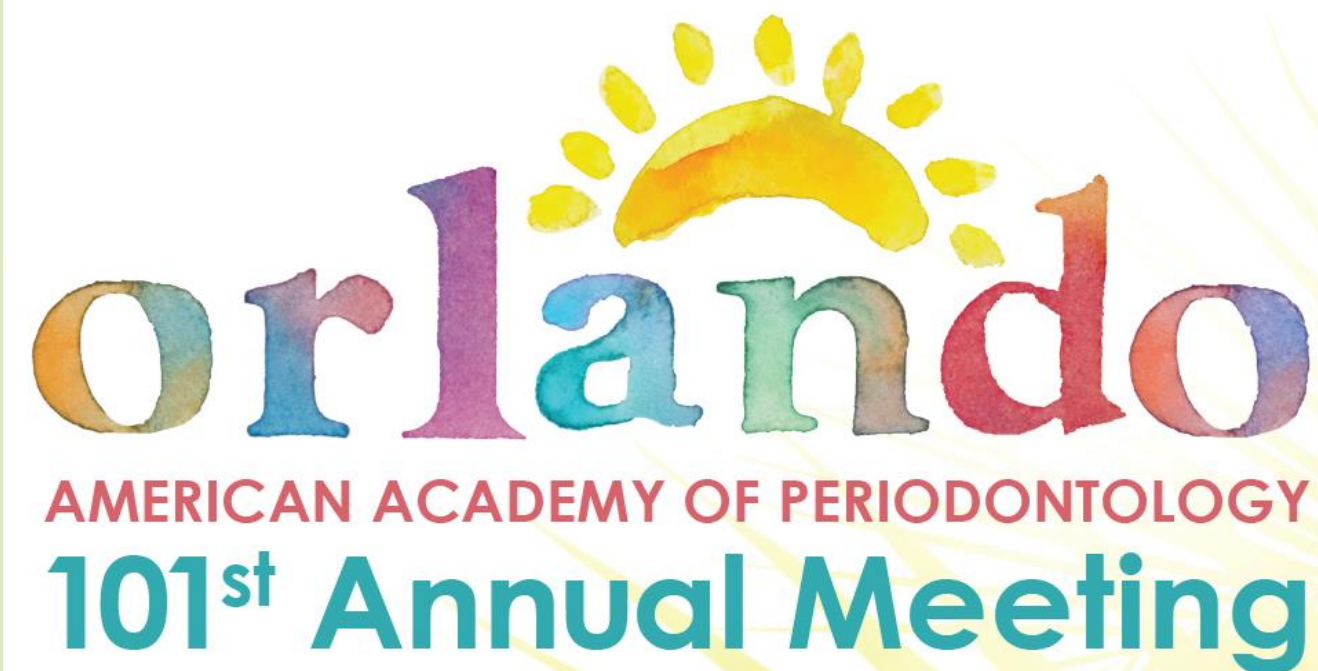
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## Challenges:

- We have an underserved state
- Relatively poor state
- Minimal Specialists in private practice
- No residency program
- Abundance of advanced systemic conditions

>Therefore our training mission is to produce clinicians who can be competent to diagnose and treat nonsurgical care in a state with minimal resources and recognize the need for more advanced care when needed.









# Challenges

- In Periodontics we not only teach technical clinical skills that must be learned, but also complex underlying biological processes as well.
- At our institution we have 3 perio course:
  - D1 (34 hours)
  - D2 (48 hours)
  - D3 years (48 hours)
  - Total: 130 hours over 3 years
- All of these courses combined does not compared to the number of hours students get in restorative classes.
- We must dispense an exorbitant amount of information in a short time frame
- Formal course time is balanced by increased experience in clinics



# What our students must feel like





- Historically our school has the basic do clinical hands on procedures until
- The problem with this they are getting their head above water.
- They merely memorize facts and then



Clinical  
Attachment  
What?

1 and 2 and the students do not  
years and are barely able to keep  
ing their first patient.

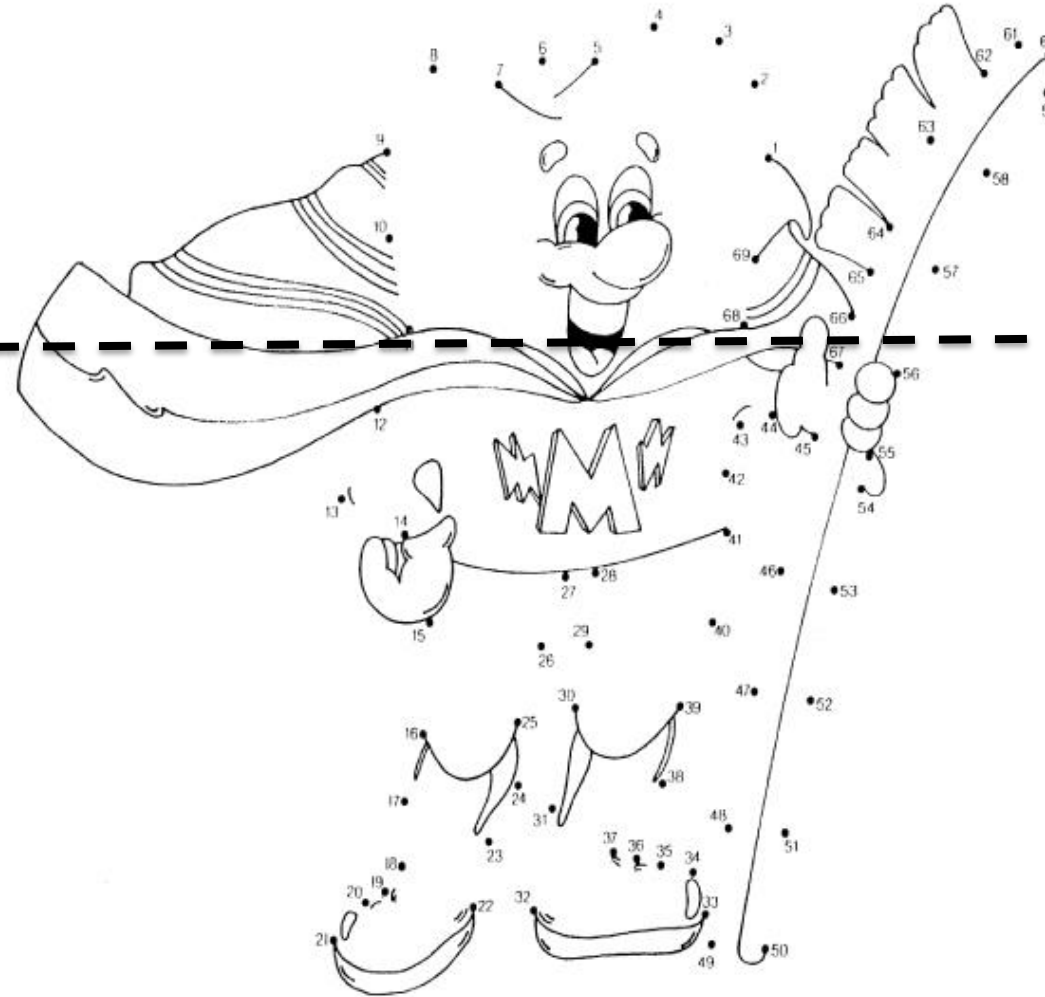




# Connect the dots

Classroom

Clinic

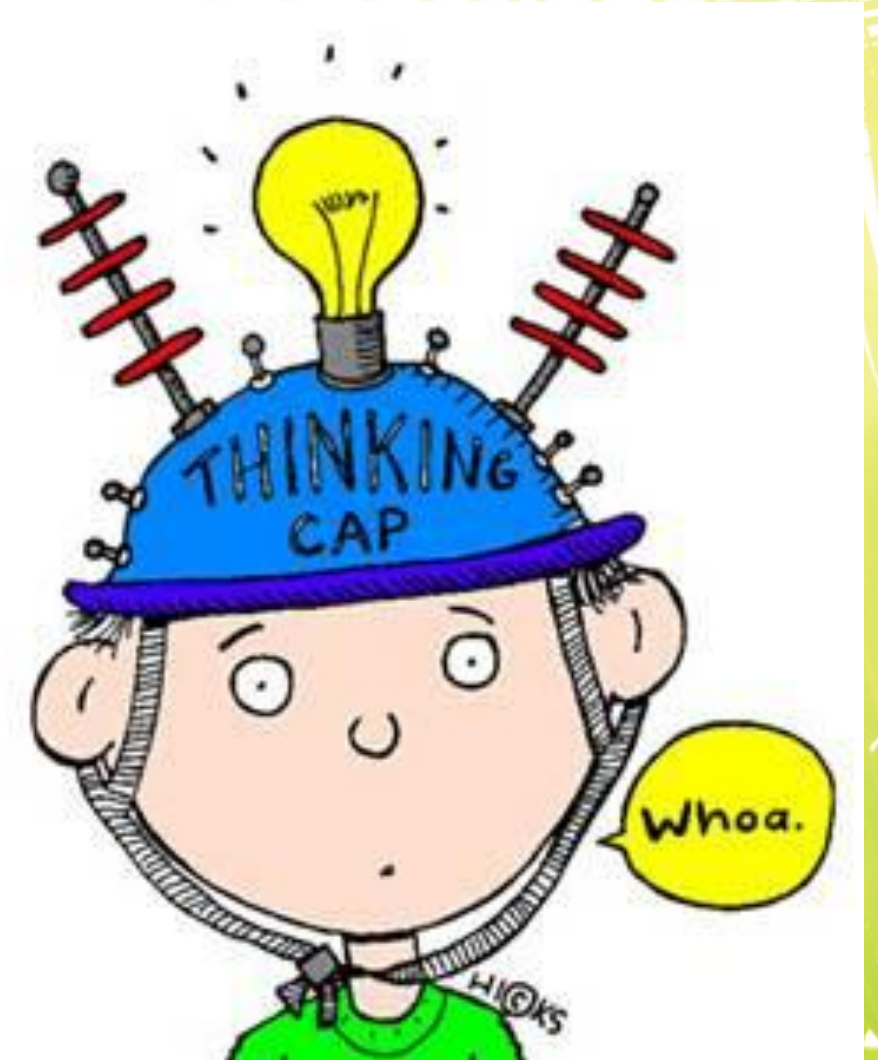






# No Post-Grad Program

- We do not have a post-grad perio program at our institution.
- We cannot have students work with residents or do rotations in a post-grad clinic.
- Our students have no residents to refer to so they must be equipped to handle these c supervision of a periodontist in our clinic.







# A Few Things We Integrated Into Our Curriculum



- High standards and expectations
- Clinical rotations with actual patient treatment beginning D1 year
- Laboratories
- Critical Thinking
  - Group discussions of actual cases
  - “Mini competencies”
  - Periodontal OSCEs
  - Critical Thinking Questions on Exams
- Clickers
- Videos
- Clinical experiences that involve all aspects of care





# High Standards and Expectations

- First, we expect the students very early in the curriculum to know and do a lot.
- We have found when you raise the bar the students consistently rise to the challenge.





# Curriculum Overview

## D1 Course

- The Anatomy and ultrastructure
- Oral hygiene techniques aids and
- Periodontal examination and dia
- Etiology and epidemiology
- Nutrition
- Microbiology form health to dise
- Pathogenesis
- Implant anatomy and peri-impla
- Treatment planning
- And more



- And more

## D3 course:

- Scope of periodontal surgery and surgical decision making
- Biology of regeneration and principles of regenerative surgery
- Lasers
- Resective surgery
- Furcation management
- Mucogingival surgery
- Functional and esthetic crown lengthening
- Implant site preparation
- Implant failures
- Endodontic considerations
- Orthodontic considerations
- Prosthetic considerations
- Suturing
- And more

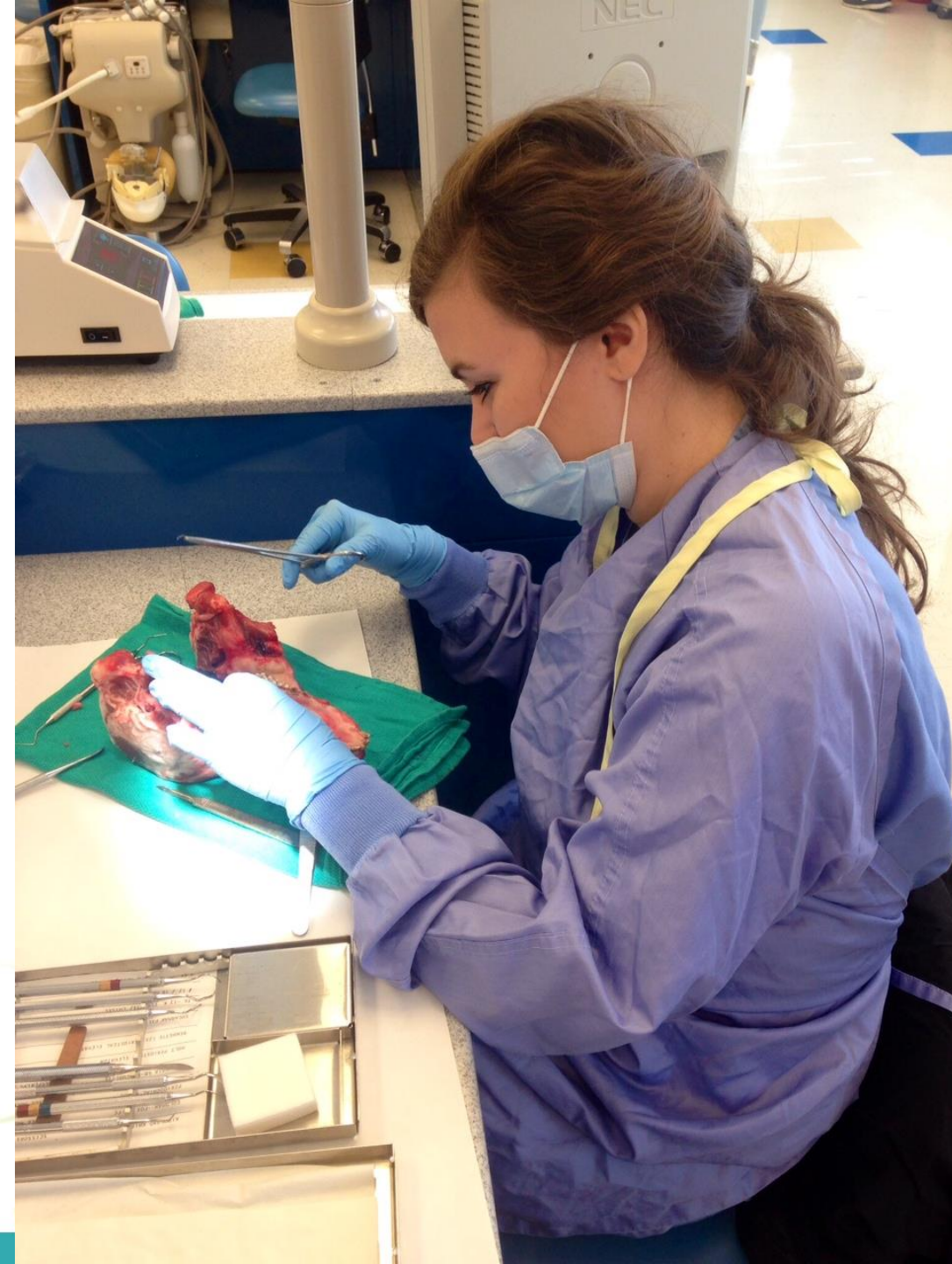




# Laboratories

- Beginning the D1 year students have laboratories where they practice clinical skills of probing, furcation detection, instrumentation, using ultrasonics, etc
- D2 year the students get more laboratory experience and added sessions in calculus detection and removal with simulated calculus
- D3 Pig Jaw surgery labs (Simulated surgery lab)
  - Students perform various surgeries on pig jaws and practice suturing techniques







# Critical Thinking







- D1 Year-Case Discussion

Students discuss clinical data and pictures about



Its and phase 2 (surgical) planning

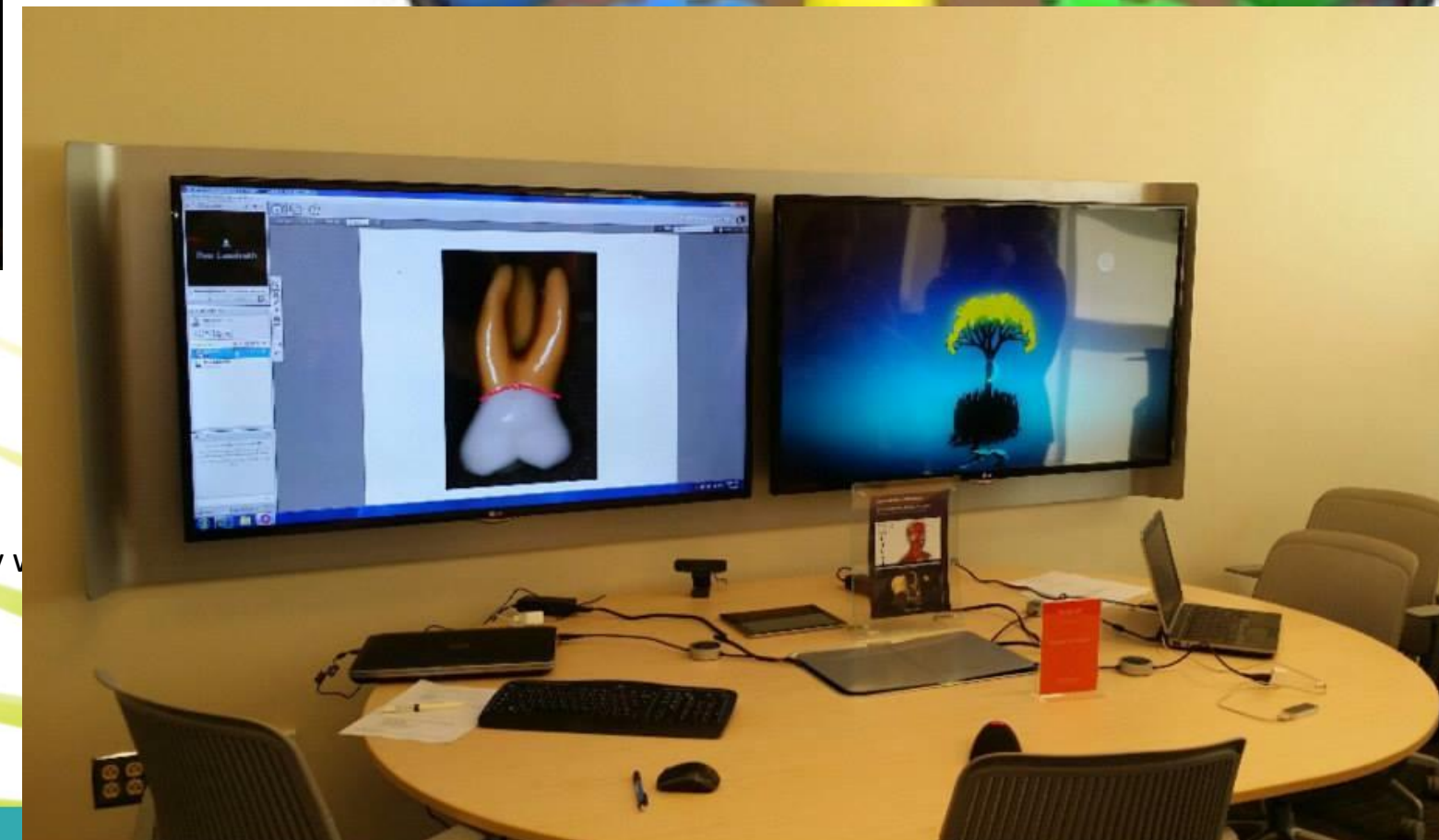
hopeless hopeless

a paper they felt answered the question

of evidence, study design, etc

o a case and were asked to show if their paper would change their perception of how they v

laboratory).







# Mini Competencies

- At our institution in the D3 and D4 years they have to do an 0180 treatment planning competency and a 4380 (phase 1/nonsurgical therapy comp).
  - These comps involve the clinical components of periodontal examination, treatment planning, and nonsurgical therapy
  - They then have a 2 hour session where they do a presentation and answer a vast array of questions
  - These are very similar to case conferences in residency
- To help prepare them for this they have to do a mini comp in the D2 year where they are given the clinical data and pictures
  - They then prepare the presentation, present it, and answer questions in the same manner (only abbreviated) that they will do during their clinical years.









# Sample OSCE Question

- A 66 year old African American male presents to your clinic for periodontal examination with the following health history: High cholesterol (crestor), hypertension (metoprolol), arthritis (aleve), erectile dysfunction (viagra), history of subacute bacterial endocarditis, and history of prostate cancer (prostatectomy).
- Does this patient require premedication?
- If yes please use the provided blank prescriptions and right out the prescription(s) as detailed as you can.





# Sample OSCE Question

Date \_\_\_\_\_

For \_\_\_\_\_

Address \_\_\_\_\_



Dr. \_\_\_\_\_ Dr. \_\_\_\_\_

Substitution Permitted

Dispense as Written

DEA No. \_\_\_\_\_

Date \_\_\_\_\_

For \_\_\_\_\_

Address \_\_\_\_\_



Dr. \_\_\_\_\_ Dr. \_\_\_\_\_

Substitution Permitted

Dispense as Written

DEA No. \_\_\_\_\_



A 53 year old Caucasian female represented to your clinic. She has sensitivity on the lower anteriors. She had a friend that got a “gum graft” and she wants one in this area to help her sensitivity.

## Sample OSCE Question



- What is the most likely cause of her sensitivity?
- What Miller Class recession is this?
- Is the patient a good candidate for soft tissue grafting? Why or Why not?



# Sample OSCE Question

- Do you think this radiograph is of good quality? Is it diagnostic? Why or why not?
- Describe all your findings from this bitewing radiograph. Be as detailed as possible







# Critical Thinking Questions On Exams

- These are multiple choice questions, but students must go through multiple steps to derive the answer.
- This differs from knowledge recall questions.
- In order to do well on these questions, students must study and know the material at a different level.
  - They cannot merely memorize the facts.





**CASE 7.** A new patient presents to you in the clinic. After review of the medical history the patient reports the following conditions and medications. Hypertension (Lisinopril), Hypercholesterolemia (Simvastatin), Arthritis (Mobic), Hypothyroidism (Levothyroxine), and Chronic Pain (Norco 5/325 prn). The patient states they take some other medications, but cannot remember the name of them or the reason they are taking them. **You determine to do a physician consult. All you get back from the physician's office is the below lab report. Based on the below lab report you can determine what is the most likely medication the patient failed to report? Select ALL that apply.**

TESTS	RESULTS	UNITS	NORMAL RANGE
WBC	6.9	$\times 10^3/\mu\text{L}$	4.0-10.5
Lymphocytes	29	%	14.0-46.0
Neutrophils	62	%	40.0-74.0
Lymphocytes (absolute) ALC	2.0	$\times 10^3/\mu\text{L}$	0.7-4.5
Neutrophils (absolute) ALC	4.3	$\times 10^3/\mu\text{L}$	1.8-7.8
Monocytes	7.0	%	4.0-13.0
RBC	4.59	$\times 10^3/\mu\text{L}$	3.8-5.10
Hemoglobin (Hg)	12.2	g/dL	11.5-15.0
Hemoglobin A1c	8.0	%	<6
International Normalized Ratio (INR)	2.8		Therapeutic range 2-3
Hematocrit	37.6	%	34.0-44.0

a)

Acyclovir

b)

Boniva

c)

Coumadin

d)

Plavix

e)

Amoxicillin

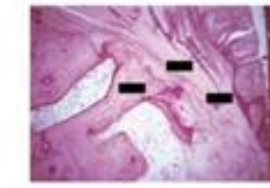


# Sample Critical Thinking Question

Which of the following would be the most accurate representation of a **gingival biopsy** taken from the following patient?



a)



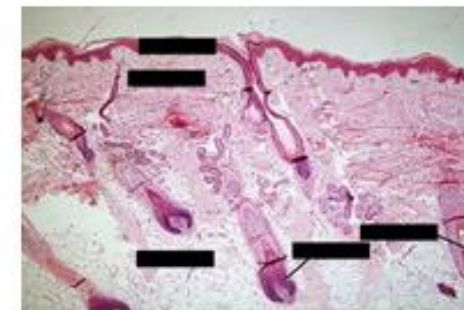
b)



c)



d)







- \_\_\_\_\_ 1. Appropriately reviewed the medical and dental history with the faculty prior to bringing the patient into the periodontal clinic.
- \_\_\_\_\_ 2. Demonstrated proper set-up of the cavitron and appropriate bidirectional mist
- \_\_\_\_\_ 3. Completed charting of specified quadrant in the patient.
- \_\_\_\_\_ 4. Developed an accurate diagnosis for the quadrant charted.
- \_\_\_\_\_ 5. Demonstrated proper use of the cavitron on the patient
- \_\_\_\_\_ 6. Demonstrated proper use of the following instruments
  - \_\_\_\_\_ Gracey 3/4
  - \_\_\_\_\_ Gracey 11/12
  - \_\_\_\_\_ Gracey 13/14
  - \_\_\_\_\_ Scalers
  - \_\_\_\_\_ ODU 11/12 subgingival explorer
- \_\_\_\_\_ 7. Educated the patient on proper oral hygiene instructions
- \_\_\_\_\_ 8. Assigned the appropriate recall interval to the patient
- \_\_\_\_\_ 9. Used proper ergonomics while working on the patient





orland  
AMERICAN ACADEMY OF PERIODONTOLOGY  
101<sup>st</sup> Annual Meeting



Mentoring





# Clickers

- Upon entering their D1 year all students purchase clickers.
- Clickers are audience response devices let you see if students get the information before you move onto something new
- We use Turning point and add clicker questions into our powerpoints that can be activated during the lecture and will allow students to answer.
- These are multiple choice and we can see the percentage of students who selected each response.
- This is interactive and some students have a competition within themselves to get these questions correct.







# Videos

- We integrate videos into lectures and exams
  - Periodontal examinations
  - Periodontal surgeries
  - Suturing
  - Oral hygiene techniques
- We use Examsoft and can integrate videos into the questions or answer choices.
- We use Movie Maker to edit and build the videos
- Students like being able to view videos of procedures prior to performing them on patients.
  - I found that students were going to youtube and looking for themselves.
  - As you know there is some good quality stuff on youtube and some of not so good quality.
  - I like to produce my own videos for the students so I can make sure the content is good.



Which of these examination procedures is performed correctly (There MAY be more than 1 correct answer. Select all that apply)







# Clinical experiences that involve all aspects of care

- As most national polls will tell you Mississippi is a poor state.
- We get a lot of patients coming to the school because they cannot afford dental care anywhere else.
- Our students are their last hope.
- For this reason we treat all cases that come into to the school in the periodontal clinic under the supervision of a periodontist.
- This includes exam, diagnosis, nonsurgical therapy, adjunctive therapy, aggressive cases, pocket elimination surgery, regeneration, perio plastic surgery, implant site development, implant placement, peri-implantitis, etc.
- This allows the students to see all aspects of periodontal care. They recognize periodontal conditions when they see them. Most of these students will not do these procedures in practice but having this exposure will allow them to refer them when they see it.
- We teach to competence level in examination, diagnosis, treatment planning, and nonsurgical therapy. Surgical competency is not possible in undergraduate curriculum.









# Summary



- We attempt to engage students from day 1 of dental school to the day they graduate.
- We have different teaching techniques that we utilize to not allow students to memorize and regurgitate the fact, but to truly know the material and its clinical applicability.
- We get the students in the clinic early and often so they can put the knowledge to practice.
- We have the students teach each other which truly shows what you do and do not know
- Hands-on experience is key





# Future Directions



- Integrate social media into the courses
  - Facebook
  - Twitter
  - Blogs
  - etc
- Flip the classroom
  - Convert all ppts to hand-outs that must be done prior to class
  - Use face to face time for applying that material to cases and group discussions and team competitions on the material
- Virtual Patients





# Acknowledgements

- Faculty of UMMC Dept. of Periodontics and Preventative Sciences
  - Full time:
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# Periodontists of the future







Thanks for your attention!  
Any Questions?