Emerging Technologies that will change Dentistry Forever:

Sophomore Training: CAD/CAM

Sophomore CAD/CAM Project:
All 130 sophomore dental students had their typodont preparations scanned and given access to the digital file to work with the software.
Dream Room:
Teaching Digital Dentistry:

10 Compact Milling Machines:

MCXL Milling Machine & BlueCam Acquisition Unit

CAD/CAM as a Teaching Tool:

Clinical Applications of Digital Dental Technology:
CAD/CAM Training for AGD Residents:

AGD Resident Training:

A learning tool for Fixed Prosthodontics:

Now I Understand!

Occlusal clearance/reduction: Now I see what you mean!
Prepcheck Evaluation Tools:

Class 2 Amalgam Preparation

Class 2 Amalgam Preparation

CAD/CAM in Year 1

Class 3 Composite Preparation
CAD/CAM in Year 1 Operative Dentistry:

Is that Possible?

Survey Statistics/Comments: Digital Dentistry

This is new-age dentistry and we should be learning this in our first year of dental school. I will more than likely be using this or even better technology once I graduate from Maryland, and having this experience may give me a competitive edge against a dentist that hasn’t used this technology. I hope, for the sake of our education, this session and more CAD/CAM technology will be added into the curriculum.

This was the best elective I took by far. I think it would be really helpful too if they could open it up to more students. I think this course was amazing, but I think if we could image each others’ mouths (clinical setting), instead of a typodont for the 2nd class, that would be very cool. Dr. Bloom and Dr. Hack really did an amazing job with this elective.

This course was extremely beneficial. Digital dentistry is going to be a big part of our generations’ careers. We need to learn what technology is out there, it’s capabilities, and how to utilize the technology. This course was very helpful to open that door, but I wish we had more time and exposure. This was a great course and I would recommend it to all students!

Comments: Digital Dentistry

This elective was one of the most interesting and useful courses these past two years due to the fact that us students really need to know how to work in the digital world. CAD/CAM is going to replace many of the traditional methods of fabricating restorations and I was glad to learn a lot more about that in this course.
Good Morning,
Thank you so much for having me to use the DentSim program, I found it to be very helpful.

Here is my feedback about DentSim:
I still remember the first time I held a hand piece and stared working on my first preparation; I was scared and had no idea what I was doing. Even after seeing pictures and videos with specific instructions, I found myself having trouble creating a mental image of what my preparation should look like "from the inside." What I mean by this is that I could create a preparation that looked like it was supposed to with the proper measurements but did not have the right wall angles and floor smoothness that I would have liked. I consider myself to be a visual learner, however when it comes to dentistry, two dimensional images are still not enough. I like the emphasis of three dimensional technology that DentSim provides; it makes me feel in control. I was able to see my preparation unfold itself both in the screen and in person, stopping every once in a while to check my progress. DentSim's 3D technology helped me understand concepts that are difficult to visualize as a first year student, for instance, the concept of wall angles. I am now constantly aware of the angle in which I hold my hand piece, looking at the DentSim screen to correct angle of my hand piece before I start drilling.

Dentsim can help in developing great techniques from the beginning of dental students careers that can translate into their patient interactive years. I think dental students would benefit from starting their first simulated clinical experiences using Dentism. This way they can have a three‐dimensional understanding of what a preparation should look like and guide themselves to achieve it through self evaluation.

Dentsim is also great when obtaining feedback from faculty because the faculty can be able to see exactly what the student did wrong and explain how to improve or avoid a problem.

Noemi Tisminesky
Class of 2019
X-Ray Box: External Controls

Surgical Microscopes for Simulation
Endodontics:

Magnified Endodontics for Preclinical Course:

Clinical Simulation:
CAD/CAM, Rotary Endodontics,
& Digital Radiography

20 Surgical Microscopes in Simulation Center:
Clinical Simulation: Student at work!

Clinical Simulation: Emulates the Clinical Environment

Clinical Simulation: 81 Units: All with 64-bit Windows 7 and CEREC 4.0 Demo Software

Bench Simulation: Say “Ah”

Bench Simulation: 91 Stations Each with 64 Bit, Windows 7 and CEREC 4.0 Demo Software
Electric tabs:

Thanks for this experience. As someone who has never used a hand piece or taken a single dentistry related class, I was surprised by how easy the simulator was to pick up. I was amazed by the resistance I felt while I moved the hand piece along the grooves I had created in the virtual structure. I truly felt as if there was an object that I was shaving away beneath my hands. Some concerns were raised by the other students such as a lack of finger rest and the fact one cannot approach the tooth/object at any angle, so there is no way to simulate the cheek of the patient. I believe this is a great and exciting technology and although it may not be used in place of the manikins, I think much could be gained by having this at our school. I know that I will feel more confidence when I go to work on a practice tooth for the first time. (Perspective student)

I thought that the Simulation Trainer was most helpful that it gives you different resistance when drilling enamel and dentin, this is something that you do not feel when drilling in pre-clinic. However as I stated it does not provide a finger rest and you do not have the simulation of cheek which you have in pre-clinic. So there some pro's and cons. But I do think that it has use here at the dental school. (Student)

The technology was incredible. Thank you so much for letting me be the first to try it!

I think that the Trainer could be very useful in simulating what enamel vs. dentin vs. pulp feel like when we are drilling. I feel this is especially important because as D1s and D2s, the D3s and D4s would always say that drilling in a hypodent is nothing like drilling in a real tooth. Additionally, it is great practice for perfecting hand skills because the simulation is incredibly realistic and it is like you are actually drilling on a real tooth. While the technology is useful in simulating the feel of the drill, I also think it is incredibly useful for simulation for improving dexterity and fine motor skills.

Comments: Simodont

Additionally, if the drill could add sounds that are more representative of real teeth and different types of situations, rather than the single uniform sound, it would help prepare us for the real world. It would also help keep us using the micro for dental use, perhaps through engineers making overlays for the various sounds we can control in the software. The Simodont is incredible, but I feel like we can use it to be true for us until the head on our own work on our organizations and perfect how to use it in our environment.

I do think the drill that I can’t wear lenses, especially once you do need to get used to seeing them for some period of time. The box that was also present made it difficult to maneuver at a bit, yet at the same time, I couldn’t feel that comfortable batting.

The next few weeks will be interesting to compare the same exercises, but perhaps it could be a mini introduction to virtual lab projects, where people could sign up every week and did it if they finished another lab project early in the period. It could be incorporated into the curriculum like the angle, brushes are rubbed through the tooth during the quadrant lab.

I hope this helps. Please let me know if there is anything more you can provide.

(Thank you again.)
3D Printing: Projet 1200

3D Printing:

3D-Printing:

3D Printing:

Research: 3D Printing of Ceramic Crown:
Clinic Monitoring

In a Dental Chair:

Interprofessional Collaboration

Monitoring the Entire Event:

Sim Man Feedback:

Thank You…

- Questions?