This is the second issue of our newsletter for Clinical Simulation section. The purpose of the newsletter is to update our members on ADEA, provide a platform where we can discuss current simulation technologies and their use in dental education, exchange ideas and information about our programs, and networking and collaborations. We hope we can provide our colleagues valuable information in the field of Clinical Simulation. Please send us information you would like to post or share with our members.

In this issue, we will introduce our current officers, discuss our annual meeting, and talk about directions for our future programs and meetings.

SECTION OFFICERS:

Councilor
Kenneth L. Allen, D.D.S., M.B.A.
kenneth.allen@nyu.edu

Chair
Ying Gu, D.D.S., Ph.D.
ying.gu@stonybrook.edu

Chair-elect
Josephine Lomangino-Cheung, D.D.S., M.S.
jl71@nyu.edu

Secretary
Alice Urbankova, D.D.S., MUDr.
au4@mac.com
MEMBERS FORUM –
Our meeting at the 2013 ADEA session will be:

**Clinical Simulation**

Members’ Forum
Sunday, Mar 17,
7:15 AM - 8:15 AM
WSCC/618

This year we do not have a section program – it is important that each member attends so we can plan for 2014. Our proposed joint program with the Dental Anatomy & Occlusion Section Simulation – that was not accepted – will be discussed at the DA&O Members’ Forum. Please try to attend both!

Simulation is a key element in dental education. With the many discussions on how to use of simulation for standardized testing, including licensing examinations, we have much to discuss.

**Bring a colleague.**
See you there....
ADEA News

At the Fall 2013 ADEA meeting Dr. Gerald Glickman, ADEA President, outlined the areas of concentration for this year. His report included:

1) Presidential Task Force on Cost of Education and Student Indebtedness. One of the questions to be addressed is how to evaluate issues reported as early as 1999 and current issues as related to the Cost of Dental Education. The task force has met three times and is working in collaboration with the ADA.

2) The ADEA website will be updated. The update will be more directed to individuals and more user friendly.

3) Annual Session 2013 – issues discussed were that several programs and posters were not accepted, it seems that there was just not enough space in the venue selected to accept all programs.

Other News

Denice C. Stewart, D.D.S., Clinical Dean at Oregon Health & Science University, been appointed Chair of the 2014 ADEA Annual Session Program Committee.

The theme for the 2014 ADEA Annual Session will be “The Science of Learning.”

Project Pool

Need money. The ADEA Project Pool may help: The ADEA House of Delegates established the ADEA Council of Sections Project Pool in 1995. Its purpose is to fund predominantly national research projects, studies, and reports that support the ADEA Mission, Core Values, and Strategic Direction and the ADEA Council of Sections’ Strategic Directions and Goals beyond the normal resources of individual Sections, Special Interest Groups(SIGs), and members.

More detail and the application for the ADEA Project Pool can be found on this website: http://www.adea.org/about_adea/SectionsSIGs/Pages/ADEACouncilofSectionsProjectPool.aspx
In addition to attending the 2013 meeting, we hope you find time to explore the beautiful city where the meeting will be held. Seattle is among the most beautiful places in the world and the largest city in the Pacific north-west region. Below are some fun facts about Seattle courtesy of SeattleLiving.Org:

http://seattleliving.org/about-seattle/seattle-fun-facts/

1. Seattle is ranked the most literate city in the country and has the highest % of residents with a college degree or higher.

2. Seattle’s Harbor Island is the largest manmade island in the nation.

3. The Farmers Market at Pike Place is the longest continuously operating farmers market in the US.

4. The original Starbucks was open in Pike Place Market in 1971.
ADEA 2012

At the March 2012 meeting in Florida, the Clinical Simulation Section sponsored two highly successful programs:

1) A joint program with the Orthodontic Section titled, “Simulation Lab: The Place to Teach Esthetics and Orthodontics… Together.” This presentation discussed the concept of introducing Orthodontics as an integral part of a D-2 Pre-Clinical esthetics course with a focus on diagnosis.

The presenters were all active members in the field:

- Kenneth Allen, Clinical Associate Professor, New York University
- Gerald Klaczany, Clinical Associate Professor, New York University
- Mitchell Lipp, Clinical Associate Professor, Director, Predoctoral Orthodontics, New York University

2) A Section sponsored program titled, “Clinical Simulation II, Is There a Better Way?” This presentation reviewed the options available in clinical simulation ranging from the ‘head on a stick’ to the latest haptic simulators.

The presenters were all active members in the field:

- Josephine Cheung, Clinical Assistant Professor, New York University
- Sharon Grayden, Assistant Research Scientist, University of Michigan
- Lynn Johnson, Professor and Assistant Dean, University of Michigan
- James Kaim, Professor, New York University
- Alice Urbankova, Assistant Professor, Stony Brook University
Award to Dr. Belenky

At the Section Program, the Clinical Simulation Section presented an award to Dr. Michael Belenky one of the founders of the Clinical Simulation SIG and subsequent Section.

In recognition of your outstanding contributions and leadership in founding both the ADEA Special Interest Group on Clinical Simulation (1985 to 2002) and the ADEA Section on Clinical Simulation (2003 to present)

Presented to
Michael M. Belenky, D.D.S., M.P.H.
FACD, FICD, FFPFA

March 2012
Currents in simulation world:

1. Contemporary non-computer-assisted simulation laboratories
   Most consist of a simulated patient or manikin with a realistic tooth model. The manikin is positioned like a reclining patient in a realistic clinical setting. Each student station usually is equipped with computer-supported audiovisual systems and at the teaching station, faculty use the multimedia system to give lectures, demonstrate different techniques or display video and ideal tooth preparations or restorations to each station. This type of simulation laboratories do not require a new approach in teaching methodology, but they provide students with a more realistic simulated patient, and make a smoother transition from the preclinical to clinical setting.

   One disadvantage of the current simulation laboratories is that the evaluation of the dental procedures is still depend on faculty feedbacks, which can be limited by availability and can be subjective with no step by step guidance to the students.

2. Computer Assisted Simulation (CAS)
   One major advantage of CAS over the current simulation laboratories is that these units are designed to provide real-time evaluations of students’ performance. The computer can virtually follow the student’s progress, and give objective, detailed feedback to students when the virtual tooth preparation is compared to the pre-programmed ideal preparation.

   A. DentSim by Image Navigations

      DentSim is a most developed computerized simulation system, combines a simulated manikin head, an online instructor and a data bank of dental procedures. When a student works on the typodont teeth in the manikin head, the computer can follow the student’s performance and formulate a virtual image of the tooth preparation, and multiple feedbacks can be given during the process of the preparation and not just the end product. Currently there are 6 dental schools are equipped with DentSim: University of Tennessee, University of Minnesota, Virginia Commonwealth University, University of Pennsylvania, Case Western Reserve University, and University of Manitoba.

   B. The Image Guided Implantology (IGI, by Image Navigations)
IGI is a computerized navigation system to guide the placement of dental implants in real time. This technology uses classic platform, identical to DentSim simulator. The system equipped an accurate motion tracking technology that tracks the positions of the dental drill and patient throughout the surgery. The exact drill position can be displayed on screen allowing monitoring of the drilling progress. IGI system can be used in training programs for training placing dental implants or already experienced clinicians usually used by periodontists, oral surgeons and implantologists to place dental implants utilizing real-time navigation, in accordance with a pre-operative CT scan.

C. Simodont Dental Simulator (by Moog, Inc)

Simodont dental trainer is a virtual reality simulator developed by Moog, Inc and Academic Center for Dentistry Amsterdam (ACDA), which combines high fidelity simulation and haptics technologies. The 3D images of teeth, the hand instruments, and dental burs are all simulated for tooth preparation and to generate a virtual drilling feel. The system allows for objective comparison of the student's individual results. Mistakes can easily be corrected by stepping back in the simulator and immediately repeating part of a procedure, which is not possible on plastic teeth. Compare to other CAS systems, the simodont system eliminated the use of typodont teeth and manikin heads as well as dental hand and rotary instruments. The system is now in use at ACTA and is being introduced in more than ten other schools around the world.

D. Virtual Reality Dental Training System (VRDTS, by Novint Technologies, Inc)
The VRDTS is in the development stage by Novint Technologies in collaboration with the Harvard School of Dental Medicine. This system consists of a desktop workstation, a phantom Desktop haptic interface, and dental simulation software. The entire system is virtual, students work with a virtual decayed tooth using virtual hand and rotary instruments to prepare and restore a tooth preparation. VRDTS hope to enable the student to feel the difference between enamel, dentin, caries, amalgam and pulp throughout the procedure. Like other CAS systems, VRDTS designed to track the student's operation precisely in real time, providing quantifiable feedback to both student and teacher. Another potential advantage is that the VRDTS system allows for the restoration of the preparation, something that is not possible with some other CAS systems. However, similar to simodont, it does not support correct operating positioning when treating real patients.

E. Iowa Dental Surgical Simulator (IDSS)

The Iowa Dental Surgical Simulator prototype is being developed by the Colleges of Dentistry and Engineering, University of Iowa. It is still very much in the early development stage. It consists of three components: the computer, the monitor and a force feedback device and software. The force models for different tooth regions — healthy enamel, healthy dentin, and carious dentin were developed in the software, and the simulator hope to provide realistic force in the force feedback device when student interacting with enamel, healthy dentin and carious dentin. This will assist students in gaining haptic skills before treating live patients. Currently the simulator is designed to teach and evaluate the subtle tactile and surgical skills relevant detection of carious lesions on the surface of teeth and within surgically cut dentin, hopefully in the future, the IDSS will be extended to a wide range of haptic tasks.
PLEASE SHARE WITH US YOUR EXPERIENCE