Meeting at a Glance

Thursday

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Saturday

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Registration Open
Pre-Conference Workshops
Image & Question Bank Committee Meetings
Poster Setup
Reception
Executive Committee Meeting

Early Morning Programming
Opening Plenary
Poster Viewing
Student Workshop
Lunch with Roundtable Discussions
Afternoon Workshops
Business Meeting
Recognition of Poster Authors
Oral Presentations
Panel Discussion
Dinner

Registration Open
Early Morning Programming
Closing Plenary
Morning Workshops
Lunch with Roundtable Discussions
Recognition of Poster Authors
Oral Presentations
Panel Discussion
Dinner
2019 Annual GRIPE Winter Meeting

Making Pathology Relevant for Millennials

January 24-26, 2019

New Orleans Doubletree Hotel
Louisiana, USA

Committee and Pre-Conference Workshops
January 24, 2019

Plenary and Workshop Sessions
January 25-26, 2019
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Purpose of the Meeting: To advance the quality of pathology education by promoting collaborative professional development.

Objectives

- Develop interactive teaching methods that can be used during class.
- Provide a teaching method (other than didactic lecture) where millennials would be more apt to learning, such as technology
- Discuss experiences with integration, including troubles that may arise in such an endeavor
- Create an interactive workshop where technology is presented as a tool
- Introduce participants to the possibilities of social media for disseminating scholarly work
- Practice hands-on with several social media options to promote attendee’s own article(s) and themselves as a researcher/author
- Learn how to construct courses, lectures, and share and distribute the tools offered by Digital Pathology
- Review characteristics of the 5 generations currently active in medical education
- Differentiate characteristics of Millennial and Generation Z learners
- Discuss the impact of Generation Z students’ preferences and tendencies on medical education
- Develop potential strategies for better engaging Generation Z health professions students
- Discuss strategies for building successful partnerships in curriculum development and oversight
- Consider optimal placement of core pathology content in different stages of an integrated curriculum, including foundational sciences, core clerkships, and elective clerkships
- Compare and contrast various teaching modalities that can be used for pathology education and assess their appropriateness for different components of the core pathology content
- Analyze a sample small group case from the UCSF Foundational Sciences curriculum
- Discuss approaches for motivating faculty and resident instructors to succeed in direct teaching
- Explore strategies for striking a meaningful balance between curriculum leadership roles and other commitments, including clinical service and research
- Discuss the potential benefits of incorporating digital technology in pathology resident education.
- Describe different technologies and approaches that can be used to enhance learning of pathology residents.
- Identify the challenges of integrating digital technology into an established didactic curriculum
- Identify major curricular components where an integrated module will be useful
- Identify the disciplines to be incorporated and develop a content outline which includes a clinical case and vignettes.
- Utilize student feedback to assess performance of the module demonstrated
- Describe generational qualities and characteristics of Millennials
- Explore how the teaching-learning environment is changing in our medical schools
- Compare and contrast best practices to address generational challenges for general medical education but also specific to pathology education
- Discuss the impact of generational preferences for pathology specialty choice
- Identify key components of a well-composed image.
- Recognize and correct problems with sample images
- Identify key components of a well-written multiple-choice question.
- Recognize and correct problems with sample questions
Thursday, January 24, 2019

12:00 PM - 05:00 PM  Registration Open  2nd Floor Prefunction

12:30 PM - 03:00 PM  Pre-Conference Workshops

Enhancing Pathology Education in the 21st Century  
Rajendra Singh - Icahn School of Medicine At Mt.Sinai  
Nottoway A

Using Social Media to Disseminate your Scholarly Work  
Julie Hewett - JulNet Solutions, LLC  
Nottoway B

03:00 PM - 03:15 PM  Break  2nd Floor Prefunction

03:15 PM - 05:15 PM  Image & Question Bank Meeting  
Amy Lin - University of Illinois Chicago  
Rosedown A & B

05:15 PM - 05:30 PM  Break  2nd Floor Prefunction

05:30 PM - 07:15 PM  Reception  
(All are welcome to attend)  2nd Floor Prefunction

07:15 PM - 09: PM  Executive Committee Meeting  
(Closed Session)  Greenwood
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<td>Registration Open</td>
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<td>08:00 AM - 08:15 AM</td>
<td>Welcome and Orientation</td>
<td>Rosedown A &amp; B</td>
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<td>08:15 AM - 09:00 AM</td>
<td>Site Host Presentation</td>
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<td>08:15 AM - 9:00 AM</td>
<td><strong>Student-Focused Session</strong></td>
<td>Nottoway A</td>
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<td>Pathologists: Who are They? What Do They Do? Is This Something For Me?</td>
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<td>Osvaldo Padilla - Texas Tech University Health Science Center in El Paso</td>
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<td>09:00 AM - 10:00 AM</td>
<td><strong>Plenary Session</strong></td>
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<td>Generation Z as Medical Students: What Can We Expect?</td>
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<td>Geoffrey Talmon - University of Nebraska Medical Center</td>
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<td>10:15 AM - 10:30 AM</td>
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<td>Osvaldo Padilla - Texas Tech University Health Science Center in El Paso</td>
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<td>11:45 AM - 01:15 PM</td>
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<td>Best Practices for Incorporating Pathology Into Integrated Medical School Curricula</td>
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<td>Raga Ramachandran, Marta Margeta - UCSF School of Medicine</td>
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<td>One Step at a Time: Optimizing a Pathology Residency Curriculum with the Use of Technology</td>
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<td>Kruti Maniar, Kristy Wolniak, Luis Blanco - Northwestern University</td>
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<td>03:15 PM - 04:45 PM</td>
<td>Business Meeting (All are welcome to attend)</td>
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Saturday, January 26, 2019

07:00 AM - 04:00 PM  Registration Open  2nd Floor Prefunction

08:00 AM - 08:15 AM  Welcome  Rosedown A & B

08:15 AM - 08:45 AM  Resident Scholar Presentation  Rosedown A & B
Nicole Jackson - Louisiana State University Health Sciences Center

08:45 AM - 09:00 AM  Awards  Rosedown A & B

09:00 AM - 10:00 AM  Plenary Session  Rosedown A & B
Integrating Technology Tools in Medical Education  
Hooman Rashidi - University of California Davis School of Medicine

10:15 AM - 10:30 AM  Break  2nd Floor Prefunction

10:30 AM - 12:30 PM  Concurrent Workshops  Nottoway A
Integrated Learning Modules: Innovative Way to Teach Millennials  
Ellen Dudry, Niti Manglik - Texas Tech University Health Sciences Center

Millennials: Considerations for Pathology Education  Nottoway B
Nicole Borges - University of Mississippi Medical Center  
Ruth Levine - University of Texas, Medical Branch

12:30 PM - 02:00 PM  Lunch with Roundtable Discussions  2nd Floor Prefunction

02:00 PM - 02:45 PM  Recognition of Poster Authors  Rosedown A & B
Oral Presentations

“Virtual Autopsy”: An Innovative Tool to Integrate Histopathology, Pathophysiology and Clinical Content in Preclinical Curricula
*Susan Way - Michigan State University*

The Use of Self-Directed Learning in Diagnosing a Cadaver with Diffuse Pulmonary Ossification, From a Student’s Perspective
*Sadie Jamshad - Medical College of Georgia*

Do Millennials Know How To Manage Time? Comparison Between Student Performance and Access to Online Materials At Usp Medical School - Brazil
*Luiz da Silva - Universo of São Paulo School of Medicine*

Perceived Impact of Novel Board Preparatory Resources on COMLEX-USA Level 1 Pathology Performance
*Gregory Yim - Touro College of Osteopathic Medicine (NY)*

Creating a Medical School Pathology Capstone Rotation: Bridging the Gap between Medical School and Residency
*Geoffrey Talmon - University of Nebraska Medical Center*

Engaging Pathology Residents in Gross Dissection with 3D Printing
*Chris Williams - University of Oklahoma Health Sciences Center*

Break

Panel Discussion

Break

Dinner (Separate Fee Required)
Poster Abstracts

An Established Pediatric Pathology Rotation At El Paso Children’s Hospital Helps Boost Medical Student Interest In Pathology
Daniel Bustamante, Harry Wilson, and Osvaldo Padilla

Challenges and Strategies for General Pathology in an Integrated Curriculum in Brazil
Giovana da Costa Sigrist, Luiz Fernando Ferraz da Silva

Computerized Bone Marrow Report Templates as a Teaching and Feedback Tool in Pathology Residency Training
Teresa Scordino

Generational Differences: Impact on Medical Education and Practice
Barbara Russell

Optimizing Competencies in the Pathology Education for Millennials in the Molecular Era
Ritcha Saxena

Pathology Teaching Within Physician Assistants, Podiatric Medicine, and Osteopathic Medical Curricula at Des Moines University
Kevin Carnevale, Yuijiang Fang

The Millenial View of Transfusion Medicine Instruction During Medical School
Marisa Saint Martin

The Use of 3D Printers in Medical Education with a Focus on Bone Pathology
Shayna Youman, Evan Dang, and Bonnie Brenseke

There is a Smart Way to Teach Pathology: Using Resources From BEST Network to Engage Learners
Mohit Shahi, Raja Koteeswaran

GoPro videos in Case-Based Learning: Bringing the Clinical Cases to Life
Fernando Bruno, Alex Braun

Dungeons and Dragons in the Pathology Lab: Increasing Strategic Thinking and Engagement Through Unfolding Cases
Fernando Bruno, Alex Braun

The Interface Between Anatomic Pathology and Diagnostic Medicine: Deficits in Basic Science Pathology Education
Drew Bernhisel
Poster Abstracts

The Development and Implementation of Screencasts for the Study of Neuropathology in Medical Education
Andrew Halterman

Qualitative Perspectives Addressing Challenges in Preparing Medical Students for the Boards, Wards, and Practice: A Reflection in Designing a More Student-Oriented Pathology Curriculum
Sarah Li, OMS-II

Bone Marrow Biopsies on Cadavers as a Model to Integrate Laboratory Medicine within a Basic Science Curriculum
Elizabeth Ricks

Application of Interactive Self-directed Online Pathology Modules with Gaming Features in Place of Traditional Lectures
Amirah Kuzu MS4
Poster Abstracts

An Established Pediatric Pathology Rotation At El Paso Children’s Hospital Helps Boost Medical Student Interest In Pathology

Daniel Bustamante, Harry Wilson, and Osvaldo Padilla

Purpose: El Paso Children’s Hospital opened in 2012 and serves the city as a freestanding children’s hospital. The hospital has an academic and service relationship with Texas Tech School of Medicine acting as pediatric home base for medical students. Pathology is integrated into the first and second year medical school curriculum by various modalities. A formal pathology rotation is offered as a month-long elective experience during the third- and fourth years of medical school. This rotation often is not managed in each medical students’ schedule. Medical students who find pathology to be a possible career choice are often not given the type of exposure that they need regarding the field of Pathology before a crucial time period when they decide which specialty to further pursue in their medical training.

Methods: The week-long pediatric pathology elective was established during medical students’ third-year pediatric rotation. Such an elective provides a condensed exposure to pathology for medical students considering a career in pathology. The first day of the elective is used to provide a broad overview of the field of pathology. A presentation and related handouts introduce the medical student to pathology training program options and their relevant statistics including the location of national programs and the types of rotations and fellowships. The students are introduced to the various processes utilized in the field of pathology including specimen collection, histologic processing, routine and special staining, cytology and blood smear preparations, flow cytometry, and various specialized procedures. The remaining days focus on case evaluations, as the medical student is given a set of slides and paper based case information to be reviewed with the pathology attending later in the day. Most cases reviewed are more prevalent within the pediatric population. The elective concludes with an overall evaluation on the performance of the medical student with an invitation to return or contact the Pediatric Pathology staff if further interest in the field of Pathology remains.

Results: Since the establishment of this shorter more flexible pathology elective, there has been an increasing steady set of rotating medical students. Correspondingly, the recent medical school classes have experienced an increase in students electing to pursue a pathology training program. The feedback provided by the medical students has been consistently positive. Comments often emphasize that the elective provides essential information regarding what is involved with being a pathologist and what challenges the pathologist experiences in everyday practice. Some students have stated that this short rotation has focused them to strongly consider pathology as a future career option.

Conclusion: Medical student exposure to pathology often is underrepresented in current medical school curricula. A unique week-long exposure in the field of Pediatric Pathology appears to allow medical students to explore this field in greater detail and to consider pathology for residency and a possible future career choice. Those who ultimately choose another field of medical training reflect an appreciation for this exposure, integrating their knowledge and understanding of pathology into future rotations and medical practice.
Challenges and Strategies for General Pathology in an Integrated Curriculum in Brazil

Giovana da Costa Sigrist, Luiz Fernando Ferraz da Silva

Introduction and Purpose: One of the major challenges in any integrated curriculum development is to combine classic department structure with the increasing demand of knowledge integration and contextualization. In 2015 USP Medical School (Sao Paulo – Brazil) launched a new integrated curriculum vanishing the departmental disciplines and adopting only supra-departmental ones such as the “Principles of Disease” for 1st year medical students, aiming to integrate Pathology, Immunology, Microbiology, Radiology and Molecular Biology. The challenge was, how to integrate and use different technologies in these areas, breaking resistances and increasing the faculty commitment without loosening the pathology identity.

Method: To cope with this challenge, the coordination of the discipline planned four strategic approaches: (1) Detailed Goal Plan; (2) Integrated Case Discussions; (3) Mini Congress; (4) Integrated Evaluation

The goal plan included 90 specific goals (administrative, technological, methodological and pedagogical): short-term – 1 year (38), middle term – 3 years (34) and long-term – 5 years (18). New goals are included based on yearly reports and students feedback.

Introduction of Integrated Case Discussions: A Clinical case is discussed and followed by a detailed pathophysiological presentation (pathologists). During this discussion other faculty bring to attention specific view of basic areas (as microbiology, immunology, etc), concluding with an integrated discussion, so the pathology is main conducting line of the discussions.

Mini-Congress: groups of 4 students prepared posters and oral presentations integrating basic aspects of a certain disease attributed to each group. The results were presented to faculty from different areas, in an integrated discussion.

Integrated tests: All discipline tests were based on clinical / surgical common presentations including for each case, a group of integrated questions focusing on basic aspects.

Results: The Goal Plan worked above the expectations. All our short-term and 90% of all middle-term goals are complete. 55% of the long-term goals (due 2020) were already completed. More than 16 new goals were included in the last 3 years (8 already completed).

During this period we expanded the amount of integrated activities from 3 to 17, reaching almost 40% off all course activities, and including several integrated strategies such as clinical based discussions, autopsy based integration, pathology-radiology correlation, clinical Grand Rounds and integrated evaluation.

The Mini Congress is now considered one of the highlights of the course by both, students and faculty, promoting significant integration. The feedback on this activity also showed that students also understand the challenges and relevance of basic-clinical integration and contextualization.

Conclusions: The Goal Plan proved to be a powerful tool to drive change in faculty, in a paced and reasonable way, breaking resistances to abrupt changes, allowing testing of different strategies, providing adaptation time and the implementation and maturation of key course transformation.

The introduction of integrated activities and active methodology in traditional departmentalized structures, even in small amount or point activities may represent the seed of more powerful transformation as the faculty gets involved and convinced by the relevance of the strategies in learning process.
Computerized Bone Marrow Report Templates as a Teaching and Feedback Tool in Pathology Residency Training

Teresa Scordino

Purpose: Pathology residents must learn to generate concise, accurate pathology reports to prepare for independent practice. Residents are expected to preview slides and write preliminary reports before signing out cases with the attending pathologist. Bone marrow reports are particularly challenging for trainees to master given the number of elements that must be addressed to create a complete report. Here we describe the development of a computerized template with drop-down menus that help residents learn the appropriate reporting elements and use their limited preview time more efficiently.

Methods: Web-based templates for peripheral blood smears and bone marrow specimens were coded using HTML5 and javascript. Node.js was used as the web server and calculations and Bootstrap 4.0 was used for user-interface styling. Knockout.js and socket.io were used for real-time information relays between user-interface and backend server. Temporary and long-term data is stored using MongoDB. The template can be used on any computer or tablet with a modern web browser. A pilot study was performed using three residents and one attending hematopathologist.

Results: Use of the template reduced the time it took residents to complete a report, increasing the likelihood that the residents were able to generate completed reports to review with the attending pathologist, and giving the residents more time to read about cases prior to sign-out. Use of the template also allowed the attending pathologist to give formative feedback on the resident’s completed report and make changes in real time with the assistance of the resident.

Conclusions: Our preliminary experience suggests the templates allow residents to take more ownership of the bone marrow cases and feel more confident generating bone marrow reports. Use of the template report also helped the attending pathologist identify potential knowledge gaps and give more directed feedback to the resident.
Generational Differences: Impact on Medical Education and Practice

Barbara Russell

This will utilize case-based discussions, supported by relevant literature, to explore the generational differences that can be identified in the workforce and in medical education. Participants will first determine, through the examination of published generational characteristics, their own generational characteristics and those of their trainees. Participants will discuss how these differences can lead to conflict in areas such as teacher/student expectations and effective communication during medical education. Of particular interest is the wide impact that digital media, technology and social media may have on clerkship and clinical practice across these groups. With the use of vignettes and active audience participation, we will explore strategies and best practices that can be used by educators to identify and understand these generational differences. Participants will be encouraged to share examples of their own interactions as well as their learnings. We hope that as a group we leave the workshop with a toolbox of strategies that helps us understand and address this issue more effectively.
Optimizing Competencies in the Pathology Education for Millennials in the Molecular Era

Ritcha Saxena

Pathology is evolving exponentially and continues to grow each year. The present-day pattern of pathology teaching involves pre-clinical training that is sometimes diverse from clinical realities. Today, the need is to modify the conventional methods, which are centered about ‘brain brimming’ and knowledge overflow with least attention to its retention and future application. Millennials, the tech-savvy learners with conversely, fairly short attention spans, respond extremely well to defined tasks and can demonstrate competencies required to complete such tasks, and competency based teaching, which revolves around relevance, is best suited for them. And here comes the role of the pathology educator, to teach the things that would truly enhance their competence and; implement competency-based teaching tools to train the students to deal with notional clinical scenarios like professionals.

It is important for the pathology educator to appraise how the millennials can learn their maximum, what are the best digital tools and what are the best online resources. Pathophysiology concepts and morphology are extremely important; however, an educator must also focus on the learners gaining the ability to ask a definable question, search for relevant scientific data, read and critically assess the information using the principles of competency-based molecular pathology, and be able to transmute pathology concepts into clinical practice. In an era of precision medicine, molecular pathology is the new lynchpin of patient-centered medicine, and the learners must know its role not just in diagnosis, but also in disease prevention and management, which behooves the pathology educator to develop their competency to interpret the immunohistochemistry and biomarker testing results. It is important for every learner to attain a solid grasp on sensitivity and specificity of various laboratory tests and to develop the competency to choose the appropriate test and its interpretation to make the best decisions for patient care as future physicians.

This highlights the idea of competency based pathology education in the current precision medicine setting and the way to smoothly transit from traditional knowledge-based lectures to competency-based pathology training. Also, by teaching competencies in pathology, the educator will be able to emboss for the student what actually pathology has to offer.
Pathology Teaching Within Physician Assistants, Podiatric Medicine, and Osteopathic Medical Curricula at Des Moines University

Kevin Carnevale, Yujiang Fang

**Purpose:** Pathology education is taught within undergraduate healthcare training programs such as Physician Assistant, Physical Therapy, Nursing, Podiatric Medicine, Osteopathic Medicine, and Allopathic Medical Schools. Students within the different healthcare training programs require different depth and breathe of pathology education within their individual curricula. Des Moines University (DMU) is a healthcare sciences university with pathology education offered to physician assistants, podiatric, and osteopathic medical students within a semi-integrated curriculum (traditional first year and systems based second year). We evaluate and compare the lecture hours and subjects taught in general and systemic pathology within the physician assistant, podiatric medicine, and osteopathic medical programs at DMU.

**Methods:** Lecture hours in pathology subjects were counted and compared in general pathology and systems based courses at DMU for physician assistant, podiatric medicine, and the osteopathic medical curricula. Different subjects within different curricula taught by a pathologist were also evaluated. We compared the lecture hours in pathology teaching of DMU osteopathic curriculum to a traditional second year pathology curriculum at University of South Carolina School of Medicine (USCSOM – allopathic medical school with traditional curriculum).

**Results:** The osteopathic and podiatric medical students take the same general pathology course within the spring semester of their first year, so the lecture hours are equivalent. The physician assistant students receive 25.7% (9hrs compared to 35hrs) of the lecture hours in general pathology compared to the osteopathic and podiatric medical students. The physician assistant students receive 60.5% (23hrs compared to 38hrs) of lecture hours in systemic pathology compared to the osteopathic and podiatric medical students. Even though the number of lecture hours (38hrs) are the same in systemic pathology for osteopathic and podiatric medical students, the podiatric medical students do not receive lectures in male and female genitourinary pathology, breast pathology, skin pathology, and laboratory medicine. The podiatric medical students do receive separate pathology lectures in surgical pathology, diabetic neuropathy, muscle/joint, bone healing and processing that are not given to osteopathic medical students. The osteopathic medical students received 70% (35hrs DMU compared to 50hrs USCSOM) of lecture hours in general pathology, and 30.2% (38hrs DMU compared to 126hrs USCSOM) of lecture hours in systemic pathology compared to the allopathic students respectively.

**Conclusion:** Physician Assistant students receive the least amount of lecture hours in pathology education within the healthcare programs at DMU. Even though the lecture hours are the same within general and systemic pathology education between the podiatric curriculum and osteopathic curriculum, the subjects taught in pathology vary within these curricula. Lastly, the amount of pathology teaching for the osteopathic medical students in a semi-integrated curriculum at DMU is markedly less especially within systemic pathology compared to allopathic medical students within a year-long traditional second year pathology curriculum.
Purpose: The aim of our study is to determine how effective current educational practices are, and how pivotal introducing transfusion medicine and its practices early on, and throughout the 4 years of medical education, could potentially impact blood ordering confidence and practices among graduates.

Traditionally, transfusion medicine education has been an under-emphasized discipline of course instruction in medical school education. In the current environment, striving for excellence in quality care and quality assurance, hospital systems have sought the expertise of the transfusion medicine sub-specialty to evaluate blood utilization and laboratory utilization within their systems.

Methods: An interview of the 4th year medical student class of 2018 (160 students) at Loyola Stritch Medical School in Maywood, IL with the use of a Google Forms survey was conducted. The survey included questions about general transfusion medicine practices, length of transfusion medicine instruction, information about obtaining consents, recommendations on length and format of transfusion medicine instruction.

Results: Of the 54 responses, (33.8% of students), 38 (70.4 %) stated that they do not feel comfortable adequately ordering blood products in their future residency career, and 16.7% (9/54) did not feel comfortable obtaining consent for transfusing blood products.

At the Loyola Stritch School of Medicine, the pathology department assists in providing medical school instruction during their 1st and 2nd years of medical school. With that in mind, only 38.9% (21/54) felt that they received adequate instruction during their first two years in medical school.

The class provided feedback for opportunities for improvement in transfusion medicine instruction which ranged from lecture format in the first two years to summary sheets to use while on rotations and their residency years.

Conclusions: Overall, we believe, and our brief study demonstrates, that more hours of transfusion medicine education are needed in medical school. Providing continued assistance and education in transfusion medicine practices throughout medical school and residency training is not only preferred, but also could impact transfusion ordering practices providing better quality care to the patients we serve.
The Use of 3D Printers in Medical Education with a Focus on Bone Pathology

Shayna Youman, Evan Dang, and Bonnie Brenseke

Purpose: The objectives of this study are to create models of benign and malignant bone tumors from CT scans and to assess the effectiveness of the use of such models in medical education.

Method: CT scans of bone pathology were anonymized using 3D slicer software and imported into web-based Democritiz3d for conversion into 3D digital models for 3D printing. Pre-created digital models of tumors were also 3D printed. Randomized groups of medical students will be surveyed for their understanding of bone pathology with and without the use of the 3D printed models.

Results: Printed models were able to imitate gross characteristics of the tumors. Impact on student education is still pending.

Conclusion: 3D printing stylized models of bone tumors is a cost and time-effective means to improve medical student understanding of this pathology.
There is a Smart Way to Teach Pathology: Using Resources From BEST Network to Engage Learners

Mohit Shahi, Raja Koteeswaran

A vast majority of medical students are either millennial or Gen Y learners who were raised in an entertainment rich, multi-media environment 1. They are technology savvy and like to be in control of their learning in terms of choice, pace, sequence and content 2. Millennial learners expect immediate feedback and meaningful assessments3. As educators, we face growing challenges with a new generation of students using technology that is constantly evolving3. One of the technology tools that can benefit pathology educators is SLICE tool of BEST network.

BEST (Biomedical Education Skills and Training) Network is a not-for-profit network of biomedical schools developing and sharing next-generation courseware and technology (best.edu.au)4. It was founded in 2014, as a joint venture of Australian Universities funded by an education grant from the Australian government. As of now, the BEST network has a bank of over 18,000 images with annotations and courseware shared by its members. The BEST network operates on an adaptive learning platform (smartsparrow.com) to design learning activities.

The workshop speakers are from the University of Queensland (UQ) Faculty of Medicine, Australia and Eastern Virginia Medical School (EVMS), VA, who have used the resources from BEST network in their teaching. In this workshop, the speakers will share their experiences of how they used the high-resolution digital images from BEST network database SLICE (best.com.au/slice) to engage the students in labs tutorials, small groups or large classroom settings. They will demonstrate using examples, how to design lessons, gather analytics, and to give feedback with this technology tool. It can be applied broadly across disciplines such as histology, immunology, microbiology and benefit educators who are interested in promoting active learning.
GoPro videos in Case-Based Learning: Bringing the Clinical Cases to Life

Fernando Bruno, Alex Braun

Purpose: Discussing clinical cases, especially as a small group activity, helps the medical students brainstorm the pathophysiology they have learned and apply it to a scenario that helps mature their critical thinking without putting a real patient at-risk. It enhances student learning, allowing early exposure to a structure resembling the morning rounds. Unfortunately, despite its benefits, written cases are often seen as unappealing by the students, who have grown used to the actor-based simulated scenarios seen in OSCE activities, leading to a reduced in-class interest and participation. We piloted the use of GoPro videos as a tool for simulated clinical cases and problem-solving activities to enhance students’ attention and engagement.

Methods: A dramatization of two cases in a GoPro video format replaced the written case. Faculty created and provided a standardized patient script to the Teacher Assistants. For each case, a TA played the role of physician, having the camera attached to the forehead, while the other played the patient, providing a first-person-perspective of the doctor-patient interaction. A class of 135 medical students was separated into two groups that participated at different times in a pathology lab session. During each session, the students watched the videos and collected history, signs and symptoms necessary for a differential diagnosis and discussed pathology questions geared towards the case. Small-groups were given time to discuss the case, the questions and work on an assigned task. Furthermore, the faculty utilized a document with students’ responses to teach the class, while also inviting each group to provide feedback on their responses. A pathology quiz with 15 questions was given at the beginning and end of the session to assess students’ learning curve. A survey was later provided to collect feedback.

Results: The videos allowed the students’ immersion to the scenario, while demonstrating patient’s behavior and nuances that would otherwise not be feasible through a written case. The small-groups effectively discussed the case, finalized the assigned tasks within the given time and partook in faculty-led discussion. A positive impact on quiz performance was seen on percentage of corrected responses from pre- to post-quiz (Group1: 44.52% to 94.58%; Group 2 58.80% to 99.86%). A total of 113 students answered the survey, with 82% agreeing to the statement “useful tool to make the lab be more interactive” (39% strongly agree; 43% agree; 8% neutral; 6% Disagree; 4% strongly disagree); 86% agreed “it helped bring the case to life” (38% strongly agree; 48% agree; 7% neutral; 3% Disagree; 6% strongly disagree); and 64% agreed “it facilitated my learning” (20% strongly agree; 44% agree; 21% neutral; 12% Disagree; 4% strongly disagree).

Conclusion: Students’ survey showed that the method was well received by most of the class, who agreed that it made the session more interactive, brought the cases to life and facilitated their learning. The process had a positive impact on post-quiz performance, being interpreted as an effective teaching method. Further investigations are necessary with crossover design and control to determine the superiority of this method compared to other modalities.
Purpose: In the past decade, the focus of medical education has shifted, leaving behind an outdated cluster of memorized facts for an improved model based on clinical applications. This encouraged medical schools to adapt their curricula to accommodate new requirements for core competencies. Pre-clinical courses have followed suit, focusing more on how the initial basic science concepts translate into clinical practice. This provides the medical students with a clearer perspective of the topics’ relevance in their future careers. Here, we showcase a model with an incomplete scenario that unfolded based on students’ choices and served as a platform to develop strategic thinking and facilitate engagement and learning.

Methods: A class of 135 medical students was separated into two groups that participated at different times in a pathology lab session. During each session, the students received an incomplete clinical case to be discussed as small-groups and asked to propose differential diagnosis. The faculty then led a discussion, debating their reasoning, after which a list of next steps was offered to the students to choose from. The list ranged from simpler options, such as further exploring patient’s history and physical exam, to more complex laboratorial testing, including biopsies, radiological testing and forensic examinations. Each small-group would then choose their preferred next course of action, as long as they debated their reasoning and expected findings with the faculty, who would further discuss how the initial differential diagnosis would evolve based on each new finding. The case would then unfold based on students’ choices. As it progressed, each finding served as a platform of discussion of pathological concepts and specimens. A pathology quiz with 15 questions was given at the beginning and end of the session to assess students’ learning curve.

Results: Although the same concepts were discoursed with both classes, the order in which the case developed was a direct consequence of the student’s choices, determining the fate of the discussion and providing a uniqueness to each session. Students felt in control, more willing to participate and were highly engaged. Realizing the impact of their actions on the fictional patient, the students brainstormed strategies before any decision. The number of students involved with distractors, such as in-class use of social media, drastically reduced during these sessions. A positive impact on quiz performance was seen on percentage of correct responses from pre- to post-quiz (Group1: 75.61% to 97.96%; Group 2: 77.60% to 99.86%). At the end-of-course evaluation, although no specific question targeted this session, students provided a series of positive comments about it in the written qualitative evaluation, such as “increased engagement”, “enhanced productivity”, “facilitation of group activity”, “more helpful” and “entertaining”.

Conclusion: End-of-course evaluation and student feedback suggest that the method was well received by many students, who agreed it made the session more interactive and increased engagement. The sessions’ design encouraged a more accountable decision-making process. The process had a positive impact on post-quiz performance, being interpreted as an effective teaching method. Further studies are necessary to verify superiority of this modality.
The Interface Between Anatomic Pathology and Diagnostic Medicine: Deficits in Basic Science Pathology Education

Drew Bernhisel

Purpose
The purpose of this poster is to explore a potential deficit in current medical school pathology curricula relating to the lack of connection between the pathology images, processes and diagnoses that students are exposed to and the practical applications to diagnostic medicine that such diagnoses bring.

Nationally, medical school curriculum is in a process of change and adaptation, generally following a trend of greater integration of different subspecialties of basic and clinical medical science (Brauer & Ferguson, 2014). This pattern applies well to pathology education which has been described as a core subject, the link between basic science and clinical medicine (Carr, Olmos, & Bushnell, 2008). While much pathology education has been designed to efficiently teach principles of body system pathology, there is a perceived disconnect between that instruction and the clinical consequences that follow a student’s diagnosis. For example, students may be skilled at spotting characteristic findings on a histopathology image but less adept at mentally making the connection to what treatments, imaging or laboratory tests or further questions may then be required. To determine the extent to which medical school education addresses the “next step” after making a diagnosis in anatomic pathology, a literature search was done to examine current trends in teaching as well as standards for instruction.

Results
While the National Standards in Pathology Education discusses the need to “categorize, interpret, and predict disease behavior from underlying principles” there is little to no research that has been done to measure the extent to which medical curricula integrate pathology, diagnosis and the next clinical decisions (Sadofsky, Knollmann-Ritschel, Conran, & Prystowsky, 2014). Because pathology is an essential discipline to medical school education and also one that is integral to the practice of medicine in a clinical setting, it is surprising that there is so little discussion of these connections. The logical implication could be that not enough attention is being paid to students’ ability to apply knowledge to the critical process of diagnosis and treatment.

Conclusions
As an understanding of the principles of pathology is critical to any sub-specialty of medicine, it is critical to develop a way to improve connections for students to the images and descriptions observed and the actions to be taken next. One possible effective solution could be implementation of well-designed case studies similar, for example, to the New York University pathology department’s “Case of the Week” that incorporate every element of a pathologist’s process from a patient history and imaging and microscopy to a detailed description of the diagnosis and (crucially) a clear discussion of the necessary clinical workup and next steps (Department of Pathology, 2018). Such comprehensive cases could be highly useful for prospective doctors because they integrate pathology, diagnosis and treatment in a clear way. Another possible solution would be to conduct specific research into the connection between pathology education and diagnostic medicine and adapt teaching standards to meet the need for students to understand and master the relationship between anatomic pathology and diagnostic medicine.
The Development and Implementation of Screencasts for the Study of Neuropathology in Medical Education

Andrew Halterman

Purpose
Growing up in a technology-rich world, millennials crave information at their fingertips. When confronted with a question, they want just enough information right when they need it. When faced with these immediate needs in pathology, many medical students become frustrated when required to sift through volumes of text and resources before arriving at a clear and concise answer. While traditional resources have their place in pathology, there is still much room for technology-enhanced resources, such as screencasts, to enrich the undergraduate medical pathology curricula.

Screencasting is a dynamic technology, well suited towards teaching highly visual content such as pathology. Through a screencast, an instructor is able to simultaneously display images while providing narration for these images. Unlike a recorded lecture, which may be provided simply for student convenience, a screencast is designed with the primary intent to be an asynchronous learning tool. It is apparent that medical students are already turning to screencasts. The availability of such resources with the intent to teach pathology, however, is lacking. Additionally, these existing resources fail to meet the needs of millennials in being concise, effective at delivering the intended message, and readily available.

One of added advantages of screencasts are the potential for availability across platforms. The technology gives students to access the resource on the go through mobile devices or during a dedicated study session on personal computers. The simplicity of the screencast platform has shown an improvement of student buy-in to use of the technology.

Here we describe the development and evaluation of concise screencasts which are both effective and efficient at delivering information right when a student needs it.

Methods
We have developed short (5 minute) screencasts related to neuropathology topics and designed them according to established multimedia design principles. To evaluate the educational value of these screencasts we conducted a randomized control trial in which medical students were administered a pre-test to assess baseline content knowledge, assigned a screencast or a text-based resource to interact with. These students were subsequently administered an immediate post-test to assess learning gain, and 2 weeks later administered a second post-test to assess retention.

Results
We show the difference in both knowledge acquisition and retention in learning neuropathology through screencasts when compared to text-based resources. We also describe the relative efficiency of each resource by describing the relationship between time spent with a resource and learning gains.

Conclusions
This study demonstrates the value of neuropathology screencasts in undergraduate medical education. It takes the approach of evaluating a technology-enhanced resource for its educational value before including it in the medical curriculum. This allows us to have greater confidence in the educational value of these screencasts compared to traditional text-based resources.
Qualitative Perspectives Addressing Challenges in Preparing Medical Students for the Boards, Wards, and Practice: A Reflection in Designing a More Student-Oriented Pathology Curriculum
Sarah Li, OMS-II

Purpose
At Touro College of Osteopathic Medicine - Harlem, the General Pathology (GenPath) first-year course is designed to be sequential with the second-year Systemic Pathology (SysPath) course. They are both constantly evolving, focusing more towards board-style questions and clinical vignettes. The flipped classroom curriculum utilizes pre-recorded lecture videos, three-hour weekly discussions, and limited exam questions. Also, medical students can attend weekly optional boards review sessions, held for about two to four hours during the academic year, to solve boards-based questions.

Methods
To continually evolve courses, meet required curriculum, and maximize preparation for medical boards exams (USMLE Step 1/COMLEX Level 1), a focus group of six participants, comprised of 3rd year medical students and alumni (1 resident and 1 practitioner), was undertaken. Questions gathered opinions and suggestions to: (1) the General and Systemic pathology courses, (2) the flipped classroom format, and (3) the optional boards review sessions. Focus groups were recorded using Zoom video conference and transcribed. Two authors reviewed the recordings and compiled themes for discussion and future course development.

Result
The overwhelming amount of foundational GenPath material necessary for SysPath was insufficiently reviewed during SysPath. Participants recommended streamlining GenPath content, emphasizing key concepts, and reviewing supplemental GenPath concepts prior to corresponding SysPath lectures, allowing students to integrate foundational and clinical knowledge. Additionally, Histology/Histomorphology recognition should be waned while increasing emphasis on Pathophysiology, Radiology, and Lab Medicine, zconcepts stressed more on the boards. Furthermore, interactive sessions should integrate more multidiscipline-based clinical vignettes with application and higher-order multiple choice boards-style questions. Lastly, supplemental resources such as Pathoma should be incorporated into the courses to emphasize high-yield boards relevant content.

The universal advantage of the flipped classroom allows for students to manage their time and the option to rewind/review concepts requiring extra time to commit to memory; however, consensus was that the videos were too long. Students take 5-7 concurrent courses with 1-4 video lectures per class per week, culminating in insufficient time to grasp concepts and prepare for weekly interactive sessions. Recorded videos also varied in year of recording, which may cause confusion regarding up-to-date content and boards relevancy. In addition, multiple faculty involvement in lecture recordings, interactive sessions, and writing exam questions contributed to “too many cooks in the kitchen,” causing confusion with different teaching styles.

Overall, participants feel that review session were helpful; the practice questions guided thinking towards boards exam skills. This bolstered critical thinking over recall. One challenge to the extra-curricular boards review sessions was that there was insufficient time to add to students’ busy schedules. A universal suggestion was to incorporate previous systems reviews during boards review sessions as a refresher and also reminder to keep on top of previous material.

Conclusion
To continually make Pathology education more student-oriented as to maximize their future as physicians, feedback was obtained from previous students on course challenges, flipped classroom learning, and optional boards review sessions effectiveness. Streamlined content, organized lecture styles, boards preparation, and clinicopathologic integration were emphasized.
Poster Abstracts

Bone Marrow Biopsies on Cadavers as a Model to Integrate Laboratory Medicine within a Basic Science Curriculum

Elizabeth Ricks

Introduction
Medical education in laboratory medicine is lacking considering the impact of laboratory testing on the current medical community. Appropriate ordering and interpretation of lab tests is an important skill for practicing physicians. Challenges to integrating lab medicine instruction into the pre-clinical medical education include finding time within an already packed curriculum and low medical student interest. Team based learning and interactive sessions have been utilized by medical schools to improve student engagement and learning. Medical students have found that procedure-based activities such as lumbar puncture simulations and bone marrow biopsy learning modules improved their anatomy knowledge. However, few studies have explored the utilization of a procedure-based activity to teach aspects of laboratory medicine.

Discussion
We propose that a team-based activity featuring bone marrow biopsies on cadavers can be a model to engage medical students to learn important aspects of laboratory medicine in the setting of a comprehensive study of related gross anatomy, histology, physiology, and pathology. Organization of the activity led by a trained pathologist could be as follows:

- Team-based learning: Medical students would be assigned into groups of 5 or 6 students. Each group would be given a scenario of a patient on whom a bone marrow biopsy has been ordered. The scenario would include history and physical exam findings as well as initial laboratory results and imaging if relevant.
- Procedure-based learning: Each medical student would have the opportunity to take a bone marrow biopsy on a cadaver in the gross anatomy lab with guidance from a pathologist after reviewing the related anatomy of the pelvis. If possible, the pathologist would also show students how the bone marrow aspirate and biopsy are processed.
- Comprehensive learning: Each team of students would be provided slides to be viewed under a microscope or electronic images that reflect results from their patient’s bone marrow biopsy and aspirate. Depending on the scenario, students would be exposed to other tests like flow cytometry immunophenotyping, chromosome analysis, fluorescence in situ hybridization (FISH), molecular testing, or microbiology testing. Each team’s case scenario and findings would be discussed within the entire group at the conclusion of the activity.

Conclusion
Current trends in medical education have reduced traditional didactic methods of teaching in favor of team-based learning and flipped classrooms. A procedure-based activity such as performing bone marrow biopsies on cadavers would introduce students to concepts of laboratory medicine in the context of a comprehensive review of anatomy, histology, and physiology. Such an activity would maximize time dedicated to the instruction of these topics in a tight curriculum and expose medical students to the clinical relevance of lab medicine in the context of a procedure they will likely see on the wards and will need to be able to interpret.
Application of Interactive Self-directed Online Pathology Modules with Gaming Features in Place of Traditional Lectures

Amirah Kuzu MS4

Analyzing an H&E-stained tissue sample for histologic abnormalities can be an overwhelming task for a medical student. It is difficult to differentiate between normal versus abnormal structural features, especially when there are multiple structures within the tissue sample and it is not clear to medical students which structure(s) they should be viewing.

The plethora of material in the time allotted for each lecture makes it difficult to ask the professor for clarification. Thus, it should not be surprising that many medical students rely heavily on outside Step 1 resources, such as pathoma, to learn anatomic pathology. The problem with such resources is the cost and the unavoidable deficiency in pathology and histology education their use creates compared to the information provided by a well-qualified pathologist.

Most of the external sources for anatomic/histologic information consist of videos streamed online and vodcasts. Vodcasts have been shown to be a preferred method by medical students for accessing this kind of information for students.

A quick search on the apple app store reveals an abundance of apps for pathology/histopathology information, including color-photos of gross and microscopic features of a variety of tissue specimens.

It seems logical that the combination of streamed videos and vodcasts in a single app would provide medical students with a valuable resource to supplement classroom learning. This idea has been described in the literature as self-directed online tutorials. Moreover, there is evidence that self-directed learning can outperform traditional classroom learning with regard to test scores and student satisfaction.

We propose a change in the delivery of anatomic pathology information in U.S. medical schools that replaces the traditional classroom lecture format with the use of customizable, interactive, self-directed online modules. Q&A games can be used as a complementary tool in pathology education by integrating common features of currently available game applications such as the ability to accumulate points for achievement awards and to compete with other players. It has been suggested that the use of such modules might increase their use by medical students and increase their retention of the material presented.

Characteristics of a self-directed online tutorial module with expanded features compared to currently available modules:

- Each page of a module could contain an interactive pathology slide with clickable labeled structures, and voice over by a professor of pathology explaining the important anatomical and histopathologic features of these structures.
- Midway through a module, a short quiz could be given about previous content with points accumulated for correct answers.
- The end-of-module quiz could contain unlabeled pathology slides with fill in the blanks for identifying important structures.
- Achievements could be unlocked for different tasks such as completing the module with a perfect score.

One learning app that combines new and effective modalities for teaching and learning, including gaming incentives, could provide a one-stop learning experience for medical students without the additional cost of commercially available applications and obviate the need for over-reliance on USMLE Step 1 preparatory resources early in their medical education.
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<table>
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<tr>
<th>Committee</th>
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Welcome to the GRIPE Annual Winter Meeting 2019

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If you have any questions, please contact Alaina West at 407-266-1128.

Accreditation Statement – University of Central Florida College of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Designation Statement – University of Central Florida College of Medicine designates this educational activity for a maximum of 12.75 AMA PRA Category 1 Credit(s)®. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Objectives:
• Identify the possibilities of social media for disseminating scholarly work, and to practice hands-on with several of these options to promote their own article(s) and themselves as a researcher/author
• Discuss how to construct courses and lectures to share and distribute with students offered by the platform
• Identify characteristics of the 5 generations currently active in medical education
• Differentiate characteristics of Millennial and Generation Z learners
• Discuss the impact of Generation Z students’ preferences and tendencies on medical education
• Discuss how to develop potential strategies for better engaging Generation Z health professions students
• Discuss strategies for building successful partnerships in curriculum development and oversight
• Discuss optimal placement of core pathology content in different stages of an integrated curriculum, including foundational sciences, core clerkships, and elective clerkships
• Compare various teaching modalities that can be used for pathology education
Additional Information

Objectives (Cont.):
• Assess various teaching modalities’ appropriateness for different components of the core pathology content
• Analyze a sample small group case from the UCSF Foundational Sciences curriculum
• Discuss approaches for motivating faculty and resident instructors to succeed in direct teaching
• Explore strategies for striking a meaningful balance between curriculum leadership roles and other commitments, including clinical service and research
• Discuss the potential benefits of incorporating digital technology in pathology resident education
• Describe different technologies and approaches that can be used to enhance learning of pathology residents
• Identify the challenges of integrating digital technology into an established didactic curriculum
• Discuss the many simple ways to integrate technology in the classroom and student coursework
• Identify major curricular components where an integrated module will be useful
• Identify the disciplines to be incorporated into an integrated curricular
• Outline content for an integrated curricular which includes a clinical case and vignettes
• Utilize student feedback to assess performance of the module
• Describe generational qualities and characteristics of Millennials
• Discuss how the teaching-learning environment is changing in our medical schools
• Compare best practices to address generational challenges for general medical education but also specific to pathology education
• Discuss the impact of generational preferences for pathology specialty choice
• Identify key components of a well-composed image
• Recognize and correct problems with sample images
• Identify key components of a well-written multiple-choice question
• Identify and correct problems with sample questions
• Integrate histopathology, pathophysiology and clinical content in preclinical curricula with the use of a “virtual autopsy.”
• Utilize self-directed learning in diagnosing cadavers
• Discuss ways millennials manage their time
• Discuss impact of Novel Board Preparatory Resources on pathology performance
### Agenda:

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<th>TIME</th>
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<tr>
<td><strong>Thursday, January 24, 2019</strong></td>
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<tr>
<td>12:30 PM – 3:00 PM</td>
<td>Enhancing Pathology Education in the 21st Century</td>
<td>Rajendra Singh, MD</td>
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<tr>
<td>(2.5 AMA PRA Category 1™ Credits)</td>
<td>Using Social Media to Disseminate your Scholarly Work</td>
<td>Julie Hewett, CMP, CAE</td>
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<td>3:15 PM – 5:15 PM</td>
<td>Question Bank Meeting</td>
<td>Geoff Talmon, MD</td>
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<td>Image Bank Meeting</td>
<td>Amy Lin, MD</td>
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<td>5:30 PM – 7:00 PM</td>
<td>Reception</td>
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<td>7:00 PM – 9:00 PM</td>
<td>Poster Board Set Up</td>
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**1/24/19 Total: 4.5 AMA PRA Category 1™ Credits**

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<td><strong>Friday, January 25, 2019</strong></td>
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<tr>
<td>8:00 AM – 8:15 AM</td>
<td>Welcome and Orientation</td>
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<td>8:15 – 9:00 AM</td>
<td>Site Host Presentation</td>
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<td>9:00 AM – 10:00 AM</td>
<td>Generation Z as Medical Students: What We Can Expect</td>
<td>Geoff Talmon, MD</td>
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<td>(1 AMA PRA Category 1™ Credits)</td>
<td>Best Practices for Incorporating Pathology Into Integrated Medical School Curricula</td>
<td>Raga Ramachandran, MD, PhD</td>
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<td>Marta Margeta, MD, PhD</td>
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<td>10:30 AM – 12:30 PM</td>
<td>One Step at a Time: Optimizing a Pathology Residency Curriculum with the Use of Technology</td>
<td>Luis Blanco MD</td>
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<td>Kristy Wolniak, MD, PhD</td>
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<td>Kruti P. Maniar, MD</td>
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<td>12:30 PM – 2:00 PM</td>
<td>Lunch with Roundtable Discussions</td>
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<tr>
<td>2:00 PM – 3:00 PM</td>
<td>Poster Viewing Session</td>
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<td>3:00 PM – 4:15 PM</td>
<td>Business Meeting</td>
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**1/25/19 Total: 3 AMA PRA Category 1™ Credits**
### Agenda (Cont.):

**Saturday, January 26, 2019**

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<tr>
<td>8:00 AM – 8:15 AM</td>
<td>Welcome</td>
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<tr>
<td>8:15 AM – 8:45 AM</td>
<td>Resident Scholar Presentation</td>
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<td>8:45 AM – 9:00 AM</td>
<td>Awards Ceremony</td>
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<td>9:00 AM – 10:00 AM</td>
<td>Integrating Technology Tools in Medical Education</td>
<td>Hooman Rashidi, MD</td>
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<tr>
<td>10:30 AM – 12:30 PM</td>
<td>Integrated Learning Modules: Innovative Way to Teach Millennials</td>
<td>Niti Manglik, MD, Ellen Dudrey, MD</td>
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<td>(2 AMA PRA Category 1™ Credits)</td>
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<tr>
<td>12:30 PM – 2:00 PM</td>
<td>Lunch with Roundtable Discussions</td>
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<td>2:15 PM – 2:45 PM</td>
<td>Recognition of Poster Authors</td>
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<tr>
<td>2:45 PM – 4:15 PM</td>
<td>Oral Presentations</td>
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<tr>
<td>2:45 PM – 3:00 PM</td>
<td>‘Virtual Autopsy’: An Innovative Tool to Integrate Histopathology, Pathophysiology and Clinical Content in Preclinical Curricula,</td>
<td>Susan Way, MA</td>
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<td>(.25 AMA PRA Category 1™ Credits)</td>
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<tr>
<td>3:00 PM – 3:15 PM</td>
<td>The Use of Self-Directed Learning in Diagnosing a Cadaver with Diffuse Pulmonary Ossification, From a Student’s Perspective</td>
<td>Sadia Jamshad</td>
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<tr>
<td>3:15 PM – 3:30 PM</td>
<td>Do Millennials Know How to Manage Time? Comparison between student performance and access to online materials at USP Medical School – Brazil</td>
<td>Luiz Da Silva, MD, PhD</td>
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<td>3:30 PM – 3:45 PM</td>
<td>Perceived Impact of Novel Board Preparatory Resources on COMLEX-USA Level 1 Pathology Performance</td>
<td>Gregory Yim, OMS-II</td>
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<td>Creating a Medical School Pathology Capstone Rotation: Bridging the Gap between Medical School and Residency</td>
<td>Geoff Talmon, MD</td>
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<td>(.25 AMA PRA Category 1™ Credits)</td>
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<td>4:00 PM – 4:15 PM</td>
<td>Engaging Pathology Residents in Gross Dissection with 3D Printing</td>
<td>Chris Williams, MD</td>
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<td>4:30 PM – 5:15 PM</td>
<td>Panel Discussion</td>
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<td>(.75 AMA PRA Category 1™ Credits)</td>
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**1/26/19 Total: 5.25 AMA PRA Category 1™ Credits**

**Conference Total – 12.75 AMA PRA Category 1™ Credits**
Disclosures:
As a provider accredited by the ACCME, University of Central Florida College of Medicine Continuous Professional Development (CPD) will insure that everyone who is in a position to control the content of an educational activity has disclosed all relevant financial relationships with any commercial interest to CPD. The ACCME defines 'relevant' financial relationships as financial relationships in any amount occurring within the past 12 months that create a conflict of interest. A commercial interests is any entity producing, marketing, reselling, or distributing health care goods or services consumed by, or used on patients. ACCME does not consider providers of clinical service directly to patients to be commercial interests – unless the provider of clinical service is owned, or controlled by an ACCME-defined commercial interest.

The following was disclosed by everyone in a position to control the content of this activity:
1. The name of the individual including spouse/partner
2. The name of the commercial interest
3. The nature of the relationship with each commercial interest
4. Disclosure if there was no relevant financial relationships
5. Intend to discuss unlabeled/investigational use(s) of drug(s) or device(s)

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<tr>
<th>Course Director, Speaker Names, CMDA staff, CMDA/CME Committee and Planning Committee Members</th>
<th>Name of the Commercial Interest</th>
<th>The Nature of the Relationship the Person has With Each Commercial Interest (speaker, stocks, speakers' bureau, clinical trials)</th>
<th>I do not have Any relevant financial relationships with any commercial interests</th>
<th>Conflict Resolved</th>
<th>I intend to discuss off-labeled investigational use(s) of drug(s) or device(s) in my presentation</th>
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<td><strong>PLANNERS</strong></td>
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<tr>
<td>Raja Koteeswaran, MD Program Committee Co-Chair</td>
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<td>Ellen Dudrey, MD Program Committee Co-Chair</td>
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<td>Julie Hewett, CMP, CAE Association Manager</td>
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<td>Luiz Fernando Ferraz da Silva, MD, PhD Program Committee Member</td>
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<tr>
<td>Regina Kreisle, MD, PhD Executive Director, GRIPE</td>
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<td>James Lyons, MD Program Committee Member</td>
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## Additional Information

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<td>Niti Manglik, MD</td>
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<td>Kristin Olson, MD</td>
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<td>Osvaldo Padilla, MD, MPH</td>
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<td>Francesca Ruggiero, MD</td>
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<td>Barbara Russell, Ed.D, Program Committee Member</td>
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<td>Cassie Chinn, MAJ</td>
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### FACULTY

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See Below
### Additional Information

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<tr>
<td>Marta Margeta, MD, PhD</td>
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<td>Raga Ramachandran, MD, PhD</td>
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<td>Hooman Rashidi, MD, FASCP</td>
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<td>Gregory Yim</td>
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The CPD Advisory Committee:
Richard Peppler, Chair; Shiva Kalidindi; Marybeth Harris; Lucia Schweitzer; Victor Herrera; Saleh Naser, Andrew Payer; Jennifer Thompson; Stephen Berman; Loretta Forlaw; Shannon Miller; Bernard Gros; Morgan Beebe, Christian Widere Ad Hoc Members: Andrea Berry; Todd Freece, CE; Alaina West, Sharon Whitmer do not have any relevant financial relationships with any commercial entities.

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