HAPS Central Regional Meeting
November 14, 2015
November 3, 2015

It is my honor to welcome each of you to Alverno College for the Midwest Regional Human Anatomy and Physiology Conference. Alverno has a long history of encouraging the kind of active learning and evidence-based practice that HAPS is known for, and the kind of professional discussion between educators that HAPS fosters. We are especially happy to support discussion of effective teaching practices in an area so vital to so many programs.

Conferences like this provide a wonderful opportunity to learn and collaborate with other educators in the field and to share best practices and success stories with other professionals. Thank you for your attendance and participation. I wish each of you a great and memorable experience.

Sincerely,

Mary Meehan,
President
HAPS Central Regional Conference: Schedule for Saturday, Nov 14

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HAPS Central Regional Meeting 2015

HAPS would like to recognize and thank all of our conference exhibitors. Their generous support makes this conference possible.

**Exhibitors**
- ADInstruments
- Artery Ink
- Draw it to Know it
- eScience Labs
- Morton Publishing Company
- Pearson

Don’t forget to register for the HAPS 2016 Annual Conference!

The 30th Annual meeting will be held in Atlanta, Georgia from May 21st to May 25th. Register online today!
Lynda Biedrzycki, M.D.

Lynda Biedrzycki is from Milwaukee, Wisconsin, growing up in the Alverno neighborhood. She received her BA from Marquette University in Biology and her MD from the Medical College of Wisconsin in 1980. In 1986, Lynda became Anatomic/Clinical and Forensic Pathology Board Certified. Following her certification, she completed a Forensic Fellowship at the Wayne County Medical Examiner’s Office in Detroit, Michigan and a Cardiac Pathology Fellowship at Brigham and Women’s Hospital in Boston.

Lynda has practiced for 30 years in forensic pathology/medical examination, mostly in the state of Wisconsin. She’s also practiced in Michigan and Boston. She is currently the Medical Examiner for Waukesha, Walworth, and Washington counties. She is very active in various pathology and forensic associations and is a Clinical Associate Professor of Pathology at the Medical College of Wisconsin.
Barb Goodman

Barb Goodman is a full professor in Sanford School of Medicine of the University of South Dakota in Vermillion, SD. She is the past chair of the American Physiological Society Teaching Section, the organizer of the 2014 and 2016 APS Institutes on Teaching and Learning, and one of the three co-PIs on the APS NSF grant establishing the Physiology Education Community of Practice. She teaches Advanced Human Physiology and Physiology for Occupational Therapy Doctoral Students and has shifted all of her classes to student-centered team-based learning.

Lynn Diener

Lynn Diener is an Associate Professor at Mount Mary University in Milwaukee, WI. She has taught a variety of courses but regularly teaches Human Physiology, Human Anatomy and Ecology. Lynn received her PhD in Molecular and Environmental Toxicology from the University of Wisconsin Madison. She enjoys incorporating student-centered learning into her classes and takes every opportunity she can to learn more about doing so effectively.
**Poster Session**

**11:00 AM – 11:30 AM**

**Evaluating the Use of Adaptive Courseware to Improve the First Year Experience in STEM Courses**
Kimberly Loscko, Mount Carmel College of Nursing, kloscko@mccn.edu, Darrell Spurlock, Mount Carmel College of Nursing, dspurlock@mccn.edu, Heather Houchard, Mount Carmel College of Nursing, hhouchard@mccn.edu

Adaptive learning technology was implemented in an anatomy and physiology course. Study participants include n=102 nursing students. Non-exam and non-grade predictors (TEAS; science scores; time spent on interactive online assignments; homework scores; correct and aware scores; ACT scores; and HS GPA) were compared to exam scores and entered into a stepwise regression model to explain variance in final course grades. Exam scores predicted final course performance more accurately than non-exam factors. While non-exam factors added incrementally to models predicting final course performance, objective measures of subject knowledge (course exams) correlated strongly both with past academic performance and final course performance.

**The Use of Cognitive Exam Wrappers to Improve Student Reflection on Learning**
Sarah Lovern, Concordia University Wisconsin, sarah.lovern@cuw.edu, Thomas J. Saleska, Concordia University Wisconsin, tom.saleska@cuw.edu,

A “cognitive exam wrapper” was used to help students reflect upon their study techniques. The wrapper which asks questions about how the student prepared was completed after the first exam in a general biology and an A&P course. The “cognitive exam wrapper” includes questions about grade expectations, test preparation, and improving on future exams. Results indicated the students that spent the most time preparing did the best on the exam. Use of the wrapper allowed students to reflect on their specific study habits such as rereading notes and using online tools and also aligned student expectations with actual performance.

**M sternalis: A rare appearance in the teaching lab**
Andrew Petto, University of Wisconsin--Milwaukee, ajpetto@uwm.edu, James Menor, University of Wisconsin, Milwaukee, JTMENOR@UWM.EDU, Nicholas Wohkittel, University of Wisconsin - Milwaukee, WOHKITT2@UWM.EDU

Lucas Gauthier, University of Wisconsin - Milwaukee, GAUTHI25@UWM.EDU

A routine dissection in the gross anatomy teaching laboratory uncovered a superficial band of muscle overlying the lateral edge of the sternum and adjacent costochondral cartilages in an 87yo female. The flat band of parallel fascicles extended 18cm from near the xiphoid process to the sternoclavicular joint unilaterally on the left side; it was about 3cm wide. The gross anatomy of other anterior chest muscles, bones, and joints appeared normal, and this individual showed no other unusual features in gross anatomy. This muscle corresponds to the M sternalis, described as a rare feature in several older human anatomy resources.
Modeling human structure and function: useful demonstrations for promoting understanding in the classroom and clinic
Andrew Petto, University of Wisconsin--Milwaukee, ajpetto@uwm.edu, Jamison Bryant, University of Wisconsin, Milwaukee, jbryant@uwm.edu, Julie Dwyer, University of Wisconsin - Milwaukee, JDWYER@UWM.EDU
Anders Hendricks, University of Wisconsin - Milwaukee, HENDRI79@uwm.edu
Sara Hutchins, University of Wisconsin - Milwaukee, hutchi63@uwm.edu
Peder Ohlrogge, University of Wisconsin - Milwaukee, OHLROGG2@uwm.edu
Sarah Tighe, University of Wisconsin - Milwaukee, smtighe@uwm.edu
Teaching and clinical settings commonly display anatomic models to illustrate structure and function (and often dysfunction) in the body. Some models are representational, providing a realistic view of relevant anatomy; others are conceptual, providing a realistic view of the way(s) things work (or break). Using familiar materials for models can be effective in an academic setting (classrooms, laboratories, study groups) or a clinical setting (patient education sessions, individual client visits, home-care settings). These examples are from peer-to-peer presentations where they were used to demonstrate how gross anatomic complexes function ... and malfunction.

The Influence of a Role-Play Membrane Transport Laboratory on Lecture Performance and Student Satisfaction
Travis Wakeham, Michigan Technological University, twakeham@mtu.edu, Brigitte Morin, Michigan Technological University, bemorin@mtu.edu, John Durocher, Michigan Technological University, jjduroch@mtu.edu
We incorporated a new membrane transport laboratory this year and examined whether this activity would improve lecture exam scores related to membrane transport. We compared lecture exam scores from 2014 (without the membrane transport lab) to lecture exam scores in 2015 (with the membrane transport lab). The overall exam scores were higher in 2015 than in 2014. Students specifically scored significantly higher on 4 of 6 questions related to membrane transport in 2015, and responded favorably to the new activity. Our results indicate the importance of the alignment of experiential laboratory activities with the classroom lecture schedule.
Workshop Session 1  
8:45 AM – 9:30 AM

RC 212 Zoology Lab: The Human Skeleton: The Sum of Its Parts  
Shannon Freire, University of Wisconsin-Milwaukee, skfreire@uwm.edu, Alexis M. Jordan, University of Wisconsin-Milwaukee, amjordan@uwm.edu  
This lecture provides a unique perspective on skeletal biology through the introduction of osteological, mortuary, and forensic archaeology, incorporating varied and complementary means of generating information on the biological impact of lived experience on the human skeleton. Archaeological perspectives offer anatomists a more diverse appreciation of the human skeleton in its own right by expanding perceptions of human osteology beyond typical structural and biological learning goals. We will provide several archaeological case studies including Richard III and the Amesbury Archer. Using well-publicized examples such as these can promote effective learning by engaging students in careful exploration of skeletal materials.

RC 112: Promoting student engagement and collaboration within a physiology lecture  
Judith Maloney, Marquette University, Judith.maloney@marquette.edu  
Active and collaborative learning are increasingly important pedagogical goals. While there are several ways to achieve this, an alternative easy, inexpensive method is to have students work in groups to answer questions interspersed throughout lecture using scratch off cards. This method has been successfully used in a physiology class, as assessed by an end of class survey. Results indicate that the cards and working as a team promoted their understanding of the material; and encouraged attentiveness and class attendance. Therefore, this method, which will be demonstrated in this workshop, is an alternative way to positively engage students in lecture.

Annette Ries, MSN Ed, RN, CHSE, Alverno College, annette.ries@alverno.edu, Patti Varga, MSN, RN, CNE, Alverno College, patti.varga@alverno.edu  
Students have a tendency to learn concepts in silos. Helping them to later apply concepts learned in early courses such as anatomy and physiology clinical nursing situations is challenging. An effective method to help students to later apply these silo'd concepts is simulation. With simulation, students are able to transfer previously learned concepts to real life clinical situations and self-assess their performance in a safe environment. In this session, participants will see the real time physiological changes of a patient using a high fidelity simulator and then view a video of a nursing class that demonstrates the teaching of A&P concepts related to chronic conditions through the use of simulation.
RC 219 A&P Lab: Using Group Projects to Explore Physiology & Test Hypotheses
Sherry Seston, Alverno College, sherry.seston@alverno.edu
At Alverno we have been using student group projects in our anatomy and physiology laboratories to allow students to make and test hypotheses related to human physiology for more than 10 years. In this workshop we will review pedagogical and practical aspects of having undergraduate students perform independent research in a sophomore-level anatomy and physiology lab, including safety and ethical concerns, experimental design, project criteria, and project assessment. Examples of guidelines and student work will also be presented to generate discussion of how student-centered group learning and inquiry might work in your curriculum.

Workshop Session 2
11:30 AM – 12:15 PM

RC 219 A&P Lab: Using Guided Inquiry Learning in your Science Classes
Ron Gerrits, Milwaukee School of Engineering, gerrits@msoe.edu, Murray Jensen, University of Minnesota - Twin Cities, msjensen@umn.edu
There are a variety of active learning activities that can benefit students. Guided Inquiry is one form of active learning that utilizes student groups, the learning cycle and includes a focus in graphical and data interpretation. This workshop will overview guided inquiry learning, how it can be used both in and out of class, and the types of resources that are currently available for science courses, including anatomy and physiology

RC 112: Paralleling Your Anatomy, Physiology and Pathophysiology Test Questions to the National Council Licensure Examination (NCLEX)
Janet Levey, Concordia University Wisconsin, jalevey@wi.rr.com
Upon graduation from nursing school, students must pass the National Council Licensure Examination (NCLEX) in order to legally practice as a professional registered nurse in the United States. The baccalaureate student nurse’s anatomy, physiology, and pathophysiology courses are the foundation of their future safe nursing practice and are assessed on NCLEX. This presentation will discuss the related NCLEX assessment, question format and blueprint. The presentation will dissect sample anatomy, physiology, and pathophysiology questions using Bloom's Taxonomy (1958) and assess items for linguistic/structural bias and test-wise flaws. Send the presenter your multiple choice test questions with item responses for anonymous review during the workshop (jalevey@wi.rr.com). The information and resources provided might assist the instructor with developing assessments for nursing students in these sciences.
RC 212 Zoology Lab: Not Just "Dem Dry Bones", Interactive Learning and the Dynamic Skeletal System
Jessica Skinner, University of Wisconsin-Milwaukee, skinner4@uwm.edu
Many students struggle with how the skeletal system integrates with other body systems, often viewing it either as entirely separate or as a static scaffolding and protective structure. This hands-on workshop addresses two HAPS Module F learning outcomes; "application of homeostatic mechanisms", and "predictions related to homeostatic imbalance, including disease states and disorders". For example, vertebral spondyloarthropathy has been related to enthesal change at loci throughout the body, such as knee, shoulder, and ankle joints. Through a brief discussion and an interactive segment including an experiment with fresh bone, this workshop hopes to demonstrate a method to enrich osteological instruction.

RC 111 Computer Lab: Creating Tutorials for Students
Ann VanEerden, Alverno College, ann.vaneerden@alverno.edu
In this session, we will define computer assisted instruction, discuss best practices for computer assisted instruction, identify potential uses of computer assisted instruction, and create one slide for use in a tutorial.

Workshop Session 3
3:00 PM – 3:45 PM

RC 212 Zoology Lab: Nurses Need Physiology; How to Convince your Nursing Students!
Pat Bowne, Alverno College, pat.bowne@alverno.edu
HAPS members often complain that their nursing students don’t see the importance of Anatomy and Physiology. This workshop discusses how nurses use these topics clinically and presents some example case studies designed to address this issue by integrating clinical judgment into physiology problems. Participants will also work on designing short case studies for their own use.

RC112: A Flipped Classroom that Works: Improve Student Performance with Draw it to Know it!
Adam Fisch, M.D., Draw it to Know it, Creations, LLC, fisch@drawittoknowit.com, Amy Harris, Draw it to Know it, Creations, LLC, harris@drawittoknowit.com
*Sponsored by Draw it to Know it*
A successful flipped classroom necessitates that students prepare for classroom activities with a credible and engaging tool that is easily accessible. Over the past 10 years, we’ve developed Draw it to Know it – Medical Sciences: a suite of online educational materials that are accessible on any device. With this workshop, we’ll show you how to incorporate our materials into your current curriculum; how students use our brief (<8 minute) tutorials to learn anatomy and physiology through the stepwise process of drawing; and how easily you can create customized study plans and monitor student performance with Draw it to Know it.
RC 219 A&P Lab: Technology in the laboratory: good or bad? The impact of camera phones in Anatomy & Physiology laboratory.

Jennifer Zitzner, Ph.D., Loyola University Chicago, jzitzner@luc.edu, Patrick Duffie, Ed.D., Loyola University Chicago, pduffie@luc.edu, Robert Morgan, Ph.D., Loyola University Chicago, rmorga2@luc.edu

Technology in the laboratory often allows instructors and students to experience structural and physiological concepts through realistic, hands-on demonstrations. However, technology can also inhibit laboratory learning by allowing perceived shortcuts in learning management. In this workshop, benefits and drawbacks regarding technology in Anatomy & Physiology laboratories will be presented. A discussion of participants’ experiences will also be included – so feel free to bring your experiences to the table too.
HAPS would like to thank the following people for making this meeting possible!

- Patricia Bowne, Professor of Biology, Alverno College
- Amal El-Sheikh, Assistant Professor of Biology, Alverno College
- Justin LaManna, Associate Professor of Biology, Alverno College
- Sherry Seston, Associate Professor of Biology, Alverno College
- Andrew J. Petto, Professor of Biological Sciences, University of Wisconsin – Milwaukee
- Ron Gerrits, Professor of Electrical Engineering and Computer Science, Milwaukee School of Engineering

And all the staff at Alverno College whose help was invaluable, especially Sara Puls in Plant Operations!