24th Annual Conference
May 29th - June 3rd

HAPS
Human Anatomy & Physiology Society

Workshops Hosted by: Arapahoe Community College

Stay at the TOP of your game

Denver Colorado

Promoting Excellence in the Teaching of Human Anatomy & Physiology
Teach Lab Sciences
FULLY ONLINE

Welcome Reception for HAPS Attendees
Hosted by Hands on Labs, Inc-LabPaq
Tuesday, June 1, 2010 4 pm to 6 pm
3880 S. Windermere Street
Englewood, CO 80110
(One Light Rail stop from ACC)

Visit us at our Booth!

Anatomy & Physiology
Biology
Chemistry
Environmental Science
Forensic Science
Geology
Microbiology
Physics

LabPaqs are academically aligned collections of science materials that allow higher education students to perform traditional laboratory assignments anytime and anywhere.
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Green initiatives at the HAPS 2010 conference include:

- Participants **will be given reusable water bottles** – compliments of ADInstruments - to replace the use of disposable water bottles.

- It is hoped that those staying at the hotel will choose the **green approach to hotel linens and towels**.

- Everyone is urged to **use the recycle bins** provided by the hotel and by Arapahoe Community College.

- **Re-USE your name tag holder** at future conferences. We will be providing reusable nametag holders this year courtesy of Pearson. If you’re attending workshops, and want to have them reused for future conferences, please drop by Biology Office (M3115) on the Arapahoe Community College campus on the last day of the workshops to drop off your name tag holder. Holders in good condition can be used for future conferences.

Participants will be taking the Light-Rail trains to and from the workshops this year. Look for the blue bear outside the hotel to direct you to the light-rail station. All participants will receive 4 tickets in the registration packet that need to be validated at light-rail stations……so please do not lose those tickets!

**Do you have other ideas** to help HAPS get greener at the conference or in its overall operations? If so, please share them with Conference Coordinator, Terry Harrison (Terry.Harrison@Arapahoe.Edu). Thanks!
The 2010 Annual Conference Planning Committee, the beautiful city of Denver, our host institution Arapahoe Community College, and the HAPS conference mascot Skully invite you to “Inspire Yourself” at the 24th Annual HAPS Conference in May 2010.

We have a fantastic conference planned for you from our prestigious update seminar speakers to our educational and innovative workshops and posters. You are sure to find something that will inform and inspire you. HAPS Institute, which has grown by leaps and bounds since its introduction at the 21st Annual Conference in San Diego, will offer some entirely new courses. Our conference will also feature an evening of dining at the Denver Museum of Nature and Science as well as the traditional annual conference banquet with a non-traditional speaker and live music by local artists Funkiphino. Our daylong trip will be through Estes Park, Colorado and the Rocky Mountain National Park, where you can travel along the nation’s Peak to Peak Highway.

**Your 2010 Annual Conference Planning Committee:**

- **Conference Coordinator**: Terry Harrison, ACC  
- **Special Events and Co-coordinator**: Molly Fiechtl, FRCC  
- **Special Events Coordinator**: Heidi Smith, FRCC  
- **Campus Arrangements**: Candy Dixon, ACC  
- **Banquet Speaker Coordinator**: Vickey Trammell, ACC  
- **Poster Session Coordinator**: Jody Johnson, ACC  
- **Update Speaker Coordinator**: Jeff Simpson, MSCD  
- **Workshop Coordinator**: Ken Smith, ACC  
- **Marketing Manager**: Javni Mody, Anne Arundel CC  
- **HAPS Business Manager**: Shanan Molnar, ASG  
- **HAPS Membership Coordinator**: Robin Hurst, ASG  
- **Program Booklet**: Katie Roberts, ASG
April 5, 2010

Dear Conference Attendees:

On behalf of the faculty and staff of the Arapahoe Community College, I am delighted to welcome you to the 24th Annual Conference of the Human Anatomy and Physiology Society workshops.

It is an honor to facilitate the conference by hosting the eighty workshop sessions this year. The professional development and collaboration provided at this conference is an essential element in the continuous improvement of the health/science field. It will have long reaching affects on the quality of science educators, healthcare professionals and scientists of the future.

Once again, welcome to Arapahoe Community College. I am confident that you will have an engaging and productive annual conference.

Sincerely,

Diana M. Doyle, Ph.D.
President,
Arapahoe Community College
As your new Executive Director, I want to extend my personal welcome to the HAPS 24th Annual Conference. I spent nine years of my career here in the Mile High City and I know you are in for a wonderful experience both at our conference and out enjoying the city.

I started as your Executive Director in January. I look forward to meeting as many members of this great organization as possible. Please introduce yourself to me so I can get to know you. I see my main task as ED is to increase and enhance member services. Please tell me how we are doing and what else we can do to make your membership experience better.

I have worked in higher education for over 30 years. My teaching career started as a Human Anatomy and Physiology professor. I hold Bachelor of Arts and Master of Science Degrees in Biology from Wayne State University (Detroit, MI.) My Doctorate in Biology was earned at Idaho State University. I have also completed a Management Development Program at Harvard University and an Administrative Leadership Program at Cornell University.

I retired as President of Broome Community College (Binghamton, NY) in 2008. I have recently been working as a consultant for higher education concerns primarily in planning and leadership development. Prior to Broome, I was President of the Titusville Campus of Brevard Community College in Florida from 2001 to 2004. I was Vice President of Instruction and Dean of Math and Sciences at Red Rocks Community College in Colorado. While at North Country Community College from 1980 to 1992 located in Saranac Lake, New York I taught biology and then directed the Continuing Education efforts for that college.

Outside of education, I have worked as a professional ski patroller, EMT and appeared in numerous community theatre productions. I am an avid, competitive athlete participating in tennis, golf, cycling and skiing regularly, often accompanied by my adult sons Andrew and Alexander.

Best Wishes,

Larry

Dr. Laurence Spraggs
Executive Director
Human Anatomy and Physiology Society
May 29, 2010

Greetings:

On behalf of the City and County of Denver, I would like to welcome you to Denver for the Human Anatomy & Physiology Society’s 24th Annual Conference, from May 29 - June 3, 2010.

We are excited and honored that you chose Denver as the host city for your program, and invite all of you to explore the many amenities and excitement the city has to offer. There is no shortage of cultural and recreational options, as the Mile High City boasts a variety of attractions, including the 10-theatre Denver Performing Arts Complex and myriad shops, restaurants, parks and outdoor recreation opportunities.

From the 16th Street Mall pedestrian promenade to one of the largest urban park systems in the nation to the Denver Art Museum’s amazing new expansion, your options are endless. Due to Denver’s unique location at the base of the Rocky Mountains, the mild, dry climate paired with more than 300 days of sunshine a year, make it the perfect place for outdoor recreational activities.

I wish you a successful and thought-provoking conference, and hope you enjoy your stay in the Mile High City.

Sincerely,

John W. Hickenlooper
Mayor
The Human Anatomy & Physiology Society (HAPS) was founded in 1989, after three successful national conferences promoting communication among teachers of human anatomy and physiology at the college level. HAPS was, and is, an organization of Human Anatomy & Physiology instructors. Excellence in undergraduate instruction in Anatomy & Physiology is a primary interest of all members. Since the Fall of 1997, there has been central administrative support for the processing of memberships and annual registrations, but HAPS remains primarily a volunteer organization.

The Board of Directors makes the final policy decisions that steer the organization, but most of the work of HAPS is accomplished by the committees. All of these people (including the Conference Planning Committee and Marketing Manager) are unpaid volunteers. A variety of committees will hold meetings over the lunch hour on the first day of workshops (Tuesday, June 1). Listen to the announcements for a complete list of committees and their lunch-time meeting locations. Please attend the meeting of the committee that interests you and find out firsthand how HAPS works and how you can get involved.

A current list of Board members can be found at: [http://www.hapsweb.org/displayboard.cfm](http://www.hapsweb.org/displayboard.cfm)
**Past Presidents**

Richard Steadman, 1989-1990  
Virginia Rivers, 1991-1992  
Gary Johnson, 1992-1993  
Sandra Grabowski, 1993-1994  
Wayne Carley, 1994-1995  
Robert Antony, 1995-1996  
Karen LaFleur, 1996-1997  
Kevin Patton, 1997-1998  
Steve Trautwein, 1998-1999  
Christine Martin, 1999-2000  
Henry Ruschin, 2000-2001  
William Perrotti, 2001-2002  
Michael Glasgow, 2002-2003  
Philip Tate, 2003-2004  
Sandra Lewis, 2004-2005  
Frederic Martini, 2005-2006  
Joseph Griswold, 2006-2007  
Margaret Weck, 2007-2008  
Kevin Petti, 2008-2009

**Current President**

John Waters, 2009-2010

**President Elect**

Caryl Tickner, 2010-2011

**Previous HAPS Conferences**

1987 & 1988 – River Grove, IL (Robert Antony)  
1989 – Reno, NV (Virginia Rivers)  
1990 – Madison, WI (Gary Johnson)  
1991 – Greenville, SC (Karen LaFleur)  
1992 – San Diego, CA (Shirley Mulcahy)  
1993 – Beaumont, TX (Wayne Carley)  
1994 – Portsmouth, NH (Pam Langley)  
1995 – St. Louis, MO (Kevin Patton)  
1996 – Portland, OR (John Martin)  
1997 – Toronto, ONT, Canada (Henry Ruschin)  
1998 – Fort Worth, TX (Theresa Page)  
1999 – Baltimore, MD (Robert Smoes)  
2000 – Charlotte, NC (Nishi Bryska)  
2001 – Maui, HI (Frederic Martini)  
2002 – Phoenix, AZ (Philip Tate)  
2003 – Philadelphia, PA (Lakshmi Atchison)  
2004 – Calgary, ALB, Canada (Izak Paul)  
2005 – St. Louis, MO (Margaret Weck)  
2006 – Austin, TX (Mary Lou Percy)  
2007 – San Diego, CA (Kevin Petti)  
2008 – New Orleans, LA (Judy Venuti)  
2009 – Baltimore, MD (Ellen Lathrop-Davis)  

**This Year**

2010 – Denver, CO (Terry Harrison)

**Coming Attractions**

2011 – Victoria, BC, Canada (Peggy Hunter)
HAPS has a number of committees, dealing with a wide variety of topics within the Society. Below is the chair and a brief description of each committee. Look for them throughout the conference and learn more about what HAPS has to offer (First-Timers will be seeking them out as part of the Scavenger Hunt).

**Animal Use Committee**  
Don Kelly

We are charged with developing, reviewing, and recommending policies and position statements on the use of animals in college-level A&P instruction.

**Annual Conference Committee**  
Izak Paul

We actively encourage HAPS members to consider hosting an Annual Conference. We provide advice and assistance to members who are considering hosting an annual conference.

**Cadaver Use Committee**  
Leslie Day

We engage in issues pertinent to development and maintenance of cadaver labs for undergraduate and graduate programs as well as development of questionnaires to provide information for HAPS members.

**Executive Committee**  
John Waters

We are comprised of the top administrators of HAPS, setting policies and governance of the Society.

**Curriculum & Instruction Committee**  
Ron Gerrits

We develop and/or compile resources that are useful for teaching A&P. Recent and ongoing projects include the development of learning outcomes and compilations of a list of useful software and websites. Future projects will include compiling teaching activities to help meet the outcomes.

**Foundation Oversight Committee**  
Judi Nath

We establish and manage endowed funds for the Society, oversee the activities and operations of the HAPS Foundation, and advise the HAPS Board of Directors on prudent and proper investment of Foundation money. We also publicize the Foundation and solicit funding.
### HAPS Committees

**2009-2010 Committee Chairs... continued**

<table>
<thead>
<tr>
<th>Committee</th>
<th>Chair(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grants &amp; Scholarships Committee</strong></td>
<td>Michael Kopenits</td>
<td>We administer the HAPS Grants and Scholarship Program, encouraging HAPS members and their students to apply for grants and awards offered by the Society.</td>
</tr>
<tr>
<td><strong>HAPS-EDucator Committee</strong></td>
<td>Marsha Sousa</td>
<td>We create a quarterly publication for the Society. We solicit articles, advertisements, announcements, and items of interest within the Society to be included in the HAPS-EDucator.</td>
</tr>
<tr>
<td><strong>HAPS-Institute Committee</strong></td>
<td>Ellen Arnestad</td>
<td>We organize short graduate courses and other continuing professional education opportunities for HAPS members.</td>
</tr>
<tr>
<td><strong>Marketing Committee</strong></td>
<td>Javni Mody</td>
<td>We create and sustain relationships between HAPS and scientific and publishing exhibitors.</td>
</tr>
<tr>
<td><strong>Membership Committee</strong></td>
<td>Elizabeth Hodgson</td>
<td>We work to increase HAPS general membership by maintaining ties with current members, creating awareness of HAPS’ value, and introducing HAPS to potential members.</td>
</tr>
<tr>
<td><strong>Nominating Committee</strong></td>
<td>Caryl Tickner</td>
<td>We assemble a list of qualified candidates for election to the HAPS Board of Directors.</td>
</tr>
<tr>
<td><strong>Partner Association Committee</strong></td>
<td>Betsy Ott</td>
<td>We work to expand HAPS visibility in the professional community through collaborative efforts with other educational and scientific organizations.</td>
</tr>
<tr>
<td><strong>Presidents-Emeriti Advisory Board</strong></td>
<td>Margaret Weck</td>
<td>We are comprised of past presidents of HAPS, providing advice and a historical perspective to the Board of Directors upon request.</td>
</tr>
</tbody>
</table>
### HAPS Committees

#### 2009-2010 Committee Chairs... *continued*

**Public Affairs Committee**  
David Evans  
We facilitate information within HAPS. We maintain a webpage about scientific, technical, and educational developments relevant to HAPS.

**Regional Conference Committee**  
Ewa Gorski  
We promote one- and two-day conferences in localized areas. We have updated a *RC Guide* to be used in the design and setup of future regional conferences.

**Safety Committee**  
Karen McMahon & Linda Nichols  
We promote laboratory safety awareness in the A&P laboratory. We continue to revise and update the HAPS *Safety Guidelines* and are preparing a collection of case studies about A&P laboratory safety for publication.

**Testing Committee**  
Curtis DeFriez & Eric Sun  
We develop, maintain, and manage the HAPS comprehensive exam. We are working on developing an online exam and aligning the exam to the student learning outcomes established by the C&I Committee.

**Web Committee**  
Tom Lancraft  
We edit the HAPS web components (site and Wikis) as well as providing resources for teaching with technology.

**Steering Committee**  
Tom Lehman & Kevin Petti  
We provide communication among the various committees of HAPS and enhance the ability of the committees to collaborate in furthering the aims of the Society.

Many of the committees will have meetings during the annual conference, as well as presenting posters with information about their activities and projects. The annual conference is a great opportunity to learn more about this aspect of HAPS. Come see what we’re about!
Welcome to the FOURTH SEASON of HAPS Institute!

HAPS Institute offers participants the opportunity to explore a variety of concepts at a deeper level and in a variety of flexible formats tailored to the busy schedule of working A&P professors.

HAPS-I focuses on concepts that are hard to understand, hard to learn, and hard to teach. Our short courses include both subject-specific content as well as practical teaching and learning methodology. And each course gives you the opportunity to publish in a peer-reviewed compendium of teaching resources.

Participants who successfully complete HAPS-I courses earn graduate biology credit through the University of Washington.

Four courses are coordinated with this Annual Conference!
- Advances in Anatomy and Physiology
- Advanced Cardiovascular Physiology: The Heart at Work and at Rest
- Concepts in Human Embryology
- Molecular and Cellular Basis of Disease

Participants in all HAPS-I courses produce a teaching module (for example, a case study or problem set) that is peer-reviewed and possibly published in a professional, peer-reviewed online publication.

Everyone registered for a HAPS-I course receives specific information on required sessions to attend at this meeting.

Why would you want to participate in HAPS-I courses?
Because you want to . . .
- Become a more effective teacher
- Brush up on a particular topic
- Get documented credit for your experience
- Gain access to expert faculty, presenters, and top-notch resources
- Strengthen your credentials in teaching A&P
- Improve chances for funding travel to a HAPS Conference
- Show students that you care about learning
- Learn new ways to teach the topics of A&P
- Enjoy the opportunity to contribute to a peer-reviewed publication

continued on next page...
You have a lot of questions, don't you?
Great! The HAPS-I staff is anxious to talk to you about our current offerings and future plans. This is YOUR professional development program, so please help us to make sure that we are meeting your needs!

There’s also plenty of information about HAPS Institute on the HAPS website at www.hapsweb.org

<table>
<thead>
<tr>
<th>MAJOR PROGRAM SPONSORS</th>
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<tr>
<td>American Association of Anatomists (AAA)</td>
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<tr>
<td>Denoyer-Geppert International (DGI)</td>
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<td>Elsevier Publishing (Mosby, Saunders)</td>
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<tr>
<th>CONTRIBUTING SPONSOR</th>
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<tr>
<td>ADInstruments</td>
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<tr>
<th>SCHOLARSHIP SPONSOR</th>
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<tr>
<td>Morton Publishing</td>
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<tr>
<td>New York Chiropractic College</td>
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<tr>
<td>The A &amp; P Professor (theAPprofessor.org)</td>
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<tr>
<th>ACADEMIC PARTNERS</th>
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<tr>
<td>American Association of Anatomists (AAA)</td>
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<tr>
<td>American Physiological Society (APS)</td>
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<tr>
<td>American Society of Microbiology (ASM)</td>
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<tr>
<td>Arapahoe Community College (CO)</td>
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<tr>
<td>Pierce College (WA)</td>
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<td>San Diego Miramar College (CA)</td>
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<td>University of Washington (Seattle)</td>
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HAPS would like to recognize and thank our all of our conference exhibitors, sponsors and advertisers. Their generous support makes this conference possible. Sponsors (identified below with an asterisk*) will be identified at the conference by a placard displayed on their exhibit tables. Please stop by their tables at the conference and thank them for their support.

A.D.A.M., Inc.
ADInstruments *
The A & P Professor (Lion Den, Inc.) *
American Association of Anatomists (AAA) *
American Physiological Society (APS) *
American Society for Microbiology (ASM) *
Arapahoe Community College
bluedoor *
Biopac Systems, Inc.
Books of Discovery
BrainSpin
Denoyer-Geppert Science Company *
eScience Labs, Inc.
Hands & Minds, Inc.
Hands-On Labs, Inc. (LABPAQ) *
Hayden-McNeil Publishing
Holt Anatomical, Inc.
Imagineering *
iWorx Systems/CB Systems, Inc.
Kendall Hunt Publishing Co.
McGraw-Hill Higher Education *
Morton Publishing Co. *
Mosby/Elsevier *
New York Chiropractic College *
Pearson *
Pearson Learning Solutions
Primal Pictures, LTD
Touch of Life Technologies *
Vernier Software & Technology
Wiley & Sons *
Wolters Kluwer Health – Lippincott Williams & Wilkins
World Scientific Publishing Co. Pte. Ltd.
Zoologik ® Foundation
TRAVEL INFORMATION

Air Travel
There is no official carrier for HAPS 2010. Fly into and out of Denver International Airport (DIA).

Rental Car Discount: Avis is offering discounted rates for the conference.
Reservations can be made through the toll-free number for Avis: 800-331-1600 or online at www.avis.com. The discount code is D757027.

skyRide
Headed to the airport? skyRide is the reliable and hassle-free way to get to Denver International Airport (DIA). With service as frequent as every 15 minutes and at least once every hour, there isn’t a more convenient or affordable ride to and from the airport.

Catch skyRide at dozens of locations throughout the metro area. skyRide buses run seven days a week, 365 days a year, and cost just $8.00, $10.00 or $12.00 one-way depending on your starting point (see skyRide route map).

Give skyRide a try next time you’re headed to the airport. It could be the easiest part of any trip.

Service operates from approximately 3:30 a.m. to 1:10 a.m. Schedules may vary. All buses are wheelchair accessible and equipped with bike racks. Discount fares, ticketbooks and passes are available.

For detailed information about Denver International Airport, please visit www.flydenver.com.

Airport Super Shuttle
- Cost is $21 per person each way
- Shuttles run 5:15 a.m. to 5:30 p.m., approximately every 15 minutes
- Shuttle ticket counters are located on Terminal Level 5, across from the rental car agencies. Reservations are not required between 5:15 a.m. and 5:00 p.m.
- Shuttle stops at Hyatt Regency Denver for pick up every 15 minutes

Super Shuttle features blue vans with SUPER SHUTTLE printed on the side. For ticket information, call 800-258-3826 or 303-316-3865.

Reservations can be made through the link on the HAPS annual conference webpage.

Airport Taxi Services
Yellow Cab Taxi - Approximate cost is $51 to DIA from downtown and $54.50 from DIA to the hotel.

Denver Light Rail Service
Whether you’re heading downtown for work or school, shopping or dining in LoDo, hitting the ballgame, or enjoying a night on the town, RTD light rail is going your way.

RTD light rail offers over 30 convenient stations on several lines to get you anywhere you want to go. From Southeast to Southwest to Central Denver, you can leave your car at home or park it at one of nearly 20 light rail Park-n-Ride locations. Then, just hop on board to get to your destination or make connections to other RTD services. Best of all, you’ll save money over driving while enjoying a commute free of stress, traffic jams and bad weather.

Once you’ve tried it, you’ll find that light rail really is the fast, comfortable and convenient way to get around Denver.

Some lines provide additional late night/early morning trips. Schedules may vary. Light rail cars are wheelchair accessible. Discount fares, ticketbooks and passes are available.

The Denver Light Rail (Regional Transportation District) runs from downtown to and from a station very close to the Arapahoe Community College Campus.
Hotel Parking Fees
On-site overnight parking, fee: $24 USD daily
Valet overnight parking, fee: $27 USD daily

All ground transportation services at Denver International Airport are located in Jeppesen Terminal, Level 5. For information, call 303-342-2000 or www.flydenver.com and click on Ground Transportation.

Getting Around Denver
One of the most convenient hotels near Denver airport, Hyatt Regency Denver is located in the central business district of downtown, within walking distance to many corporate offices and attractions. Denver offers several modes of transportation for getting around the area.

- **16th Street Shuttle** – Runs throughout the central business and entertainment district of downtown Denver.

- **Light Rail Service/RTD** – Stops at most corners in the city, including Invesco Field, Pepsi Center/Six Flags/Elitch Gardens, Union Station - Lower downtown (LODO)/Coors Field/16th Street Mall. Cost is $1.75 -$4.00 each way.

- **Amtrak** – The station is approximately 11 blocks from the hotel.

<table>
<thead>
<tr>
<th>Light-Rail to Workshops</th>
<th>Tuesday June 1st and Wednesday June 2nd</th>
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<tbody>
<tr>
<td>Departure Time : 813a</td>
<td>From THEATER DISTRICT CONVENTION CENTER STATION - 1324 CHAMPA ST</td>
</tr>
<tr>
<td>Look for Blue Bear</td>
<td>Corner: SW Intersection: Theatre District/Convention Ctr Stn City: Denver</td>
</tr>
<tr>
<td>Go To</td>
<td>Route: 101 Destination Sign: #101 LRT D Line / D-Line Mineral Departs: 8:26AM Next Trip Departure: 8:36AM</td>
</tr>
<tr>
<td>Board</td>
<td>Intersection: Littleton / Downtown Station City: Littleton Arrives: 8:49AM</td>
</tr>
<tr>
<td>Exit</td>
<td>From here you will walk South and look for the big concrete building - ACC</td>
</tr>
<tr>
<td>Travel Time</td>
<td>23 minutes</td>
</tr>
<tr>
<td>You Have Arrived</td>
<td>Arapahoe Community College</td>
</tr>
</tbody>
</table>

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HAPS 2010 Schedule of Events

Saturday, 29 May
Hyatt Regency Denver Convention Center

8:00 AM – 9:00 AM  Breakfast Meeting - Committee Chairs & Staff

8:00 AM – 6:00 PM  Exhibitors Set Up Capitol 4, Level 4

9:00 AM – 12:00 PM  Board of Directors Meeting Quartz, Level 3

12:00 PM – 6:00 PM  Registration Capitol Foyer North, Level 4

12:00 PM – 1:30 PM  Board of Directors and Steering Committee Luncheon Mineral Hall A, Level 3

12:00 PM – 1:30 PM  HAPS Institute Team & Partners Lunch Meeting Mineral Hall A, Level 3

1:30 PM – 4:00 PM  Board of Directors and Steering Committee Meeting Granite, Level 3

3:00 PM – 4:30 PM  HAPS Institute Course Orientation Mineral Hall A, Level 3

8:00 PM – 10:00 PM  Opening Welcome Reception Capitol 5-7, Level 4

Sunday, 30th May
Hyatt Regency Denver Convention Center

7:00 AM – 1:00 PM  Registration Capitol Foyer North, Level 4

7:30 AM – 8:30 AM  First-timers’ Breakfast Mineral Hall F-G, Level 3

7:30 AM – 8:30 AM  Continental Breakfast (all attendees except first-timers’) Capitol 1-4, Level 4

7:30 AM – 5:15 PM  Exhibits Capitol 1-4, Level 4

8:45 AM – 9:00 AM  Welcome and Opening Remarks Capitol 5-7, Level 4

9:00 AM – 10:15 AM  Update Seminar I Capitol 5-7, Level 4
Dr. Alan Villavicencio
Neurosurgery in the 21st Century

10:15 AM – 10:45 AM  Refreshment Break & Exhibits, Posters (presenters available to discuss their posters)
HAPS 2010 Schedule of Events... continued

10:45 AM – noon  Update Seminar II  Capitol 5-7, Level 4  
Dr. Diane France  
Forensic Anthropology, Human vs. Non-Human

Noon – 2:00 PM  Lunch on your own

2:00 PM – 3:15 PM  Update Seminar III  Capitol 5-7, Level 4  
Dr. Andrew Subudhi  
Motor Performance at Altitude: Influence of Cerebral Hypoxia

3:15 PM – 3:30 PM  Refreshment Break & Exhibits  
Posters (presenters available to discuss their posters)

3:30 PM – 4:45 PM  Update Seminar IV  Capitol 5-7, Level 4  
Dr. Kurt H. Albertine  
Anatomy-Teacher Scholar Program at the University of Utah, School of Medicine

5:00 PM – 6:00 PM  Meet the HAPS Committee Chairs  Capitol Foyer North, Level 4

6:00 PM – 9:00 PM  Dinner at the Denver Museum of Nature and Science  
Optional activity - requires purchased ticket

Monday, 31st May  
Hyatt Regency Denver Convention Center

7:30 AM – 8:30 AM  Continental Breakfast  Capitol 1-4, Level 4

8:00 AM – 1:00 PM  Registration  Capitol Foyer North, Level 4

7:30 AM – 5:15 PM  Exhibits  Capitol 1-4, Level 4

8:30 AM – 10:00 AM  HAPS Annual Membership Meeting  Capitol 5-7, Level 4

10:00 AM – 10:30 AM  Refreshment Break & Exhibits  
Posters (presenters available to discuss their posters)

10:30 AM – 11:45 AM  Update Seminar V  Capitol 5-7, Level 4  
Dr. Victor Spitzer  
The Visible Human Revisited – Anatomical Visualization and Medical Procedure Simulation

11:45 AM – 1:15 PM  Lunch on your own
HAPS 2010 Schedule of Events... continued

1:15 PM – 2:15 PM  Update Seminar VI  Capitol 5-7, Level 4  
Dr. Tod Clapp, Colorado State University  
Teaching Undergraduates the Basal Ganglia Circuits

2:15 PM – 2:30 PM  Refreshment Break & Exhibits  Capitol 1-4, Level 4

2:30 PM – 3:30 PM  Update Seminar VII  Capitol 5-7, Level 4  
Dr. Susan Barman, Michigan State University  
What Can You Learn about the Cardiovascular System by Studying Rhythms in Sympathetic Nerve Activity?

3:30 PM – 5:00 PM  Exhibits and Door Prizes  Capitol 1-4, Level 4

6:00 PM – 7:00 PM  Pre-banquet Happy Hour  Capitol Foyer, Level 4  
(included with your purchased banquet ticket)

7:00 PM – 11:00 PM  Banquet, Keynote Speaker and Dancing  Capitol 4-7, Level 4

Tuesday, 1st June  
Arapahoe Community College (ACC)

7:30 – 8:30 AM  Transportation to ACC by light rail  
light rail passes provided in registration packet (estimated travel time ½ hour)

8:00 AM – 9:00 AM  Continental Breakfast at ACC  
Cafeteria (M1900)

9:00 AM – 9:15 AM  Welcome to ACC

9:30 AM – 12:15 PM  Workshops  
9:30 AM-10:30 AM  
10:45 AM-12:15 PM

12:15 PM – 1:30 PM  Lunch  
provided in ACC Cafeteria (M1900)

1:30 PM – 4:00 PM  Workshops  
1:45 PM-2:45 PM  
3:00 PM-4:00 PM

4:00 PM  Transportation back to Hyatt Regency by light rail
Wednesday, 2nd June
Arapahoe Community College (ACC)

8:00 – 8:30 AM  Transportation to (ACC) by light rail
light rail passes provided in registration packet  (estimated travel time ½ hour)

9:15 AM – 12:00 PM  Workshops
9:15 AM-10:15 AM
10:30 AM-12:00 PM

12:00 PM – 1:45 PM  Lunch
Provided in ACC Cafeteria (M1900)

1:45 PM – 2:30 PM  Workshops
1:30 PM-2:30 PM

2:30 PM  Transportation back to Hyatt Regency by light rail

Thursday, 3rd June
Optional Day Trip – Rocky Mountain High Tour

7:00 AM  Buses load for Rocky Mountain National Park (snack included)
(requires additional purchased ticket)

4:30 PM  Buses return to hotel

**Please see page 74 for specific details about this Optional Day Trip**
Dr. Alan Villavicencio

Topic: Neurosurgery in the 21st Century,
Sunday, May 30, 9:00 am-10:15 am

Contact Information: Boulder Neurosurgical Associates

1155 Alpine Avenue, Suite 320
Boulder, CO  80304
303-938-5700
atv@bnasurg.com

Dr. Villavicencio graduated with honors from Harvard Medical School in Boston, MA in 1995 and went on to complete a neurosurgical residency at the renowned Duke University Medical Center in Durham, NC in 2001. He then went on to do a specialty orthopedic spine surgery fellowship at Cedars-Sinai Medical Center in Los Angeles, CA in 2002 and is one of only a handful of surgeons in the country with dual neurosurgery and orthopedic spine training. Dr. Villavicencio is board certified and the senior practicing partner at Boulder Neurosurgical Associates. He specializes in complex spinal reconstruction surgery, including treatment of scoliosis and other types of spinal deformity. Dr. Villavicencio also specializes in minimally invasive spine surgery. He treats most types of brain and spinal disorders, including all types of brain tumors and performs approximately 500 operative cases each year. Dr. Villavicencio is Director of Research and Development for Boulder Neurosurgical Associates (BNA) and is Director of Neurosurgery at Boulder Community and Longmont United Hospitals and Director of Surgery at The Minimally Invasive Spine Institute in Colorado, which he founded. Dr. Villavicencio has presented hundreds of abstracts at national and international neurosurgical meetings. In addition, he has published more than 60 peer-reviewed articles and book chapters in leading neurosurgical journals and textbooks. Dr. Villavicencio also is principle investigator for several ongoing U.S. Food and Drug Administration (FDA) IDE (Investigational Device Exemption) prospective randomized trials. He is a member of American Association of Neurological Surgeons (AANS), Congress of Neurological Surgeons (CNS), North American Spine Society (NASS), Colorado Neurosurgical Society (CNS), Colorado Medical Society (CMS), AANS/CNS Section on Tumors and Section on Disorders of the Spine and Peripheral Nerves.
Update Seminar #2

Dr. Diane France

**Topic:** Forensic Anthropology, Human vs. Non-Human, Sunday, May 30, 10:45 am-12:00 pm

Contact Information: dfrance@verinet.com

Diane L. France grew up in Walden, Colorado, obtained bachelor’s and master’s degrees at Colorado State University, and a doctorate in physical anthropology with a concentration in forensics from the University of Colorado in 1983. She was certified as an expert in forensic anthropology by the American Board of Forensic Anthropology (ABFA) in 1989 (the 41st person to do so). Dr. France taught at Colorado State University for a few years and then started France Casting, a small business that manufactures anatomical replicas for museums and universities, now celebrating its 29th year. She was one of the first members of NecroSearch, International, a multidisciplinary, volunteer organization dedicated to assisting law enforcement in the location of clandestine graves and the recovery of evidence (including remains) from those scenes, and was president for several years. She has served on the board of directors of ABFA and was the president of the board for 5 years. She has also served as Vice Chairman of the Forensic Sciences Foundation, Chairman of the Physical Anthropology Section of the American Academy of Forensic Sciences and is currently a fellow of the American Academy of Forensic Sciences. Diane is a former member of the Colorado Body Identification Team and DMORT and the federal mass fatality incident Rhode Island, and others. She is the subject of “Bone Detective...” by Lorraine Hopping-Egan and is the author of “Human and Nonhuman Bone Identification: A Color Atlas” published by CRC Press, “Laboratory Manual and Workbook in Physical Anthropology” now in the 7th edition, “Nonhuman and Subadult Human Bone Identification” (under contract), and other books, chapters, and refereed publications.
Dr. Andrew Subudhi

**Topic:** Motor Performance at Altitude: Influence of Cerebral Hypoxia,
*Sunday, May 30, 2:00 pm-3:15 pm*

Contact Information:  Dr. Andrew Subudhi

2410 Royal Palm Dr.

Colorado Springs, CO  80918

719-255-3938

asubudhi@uccs.edu

Following degrees in mathematics (B.A. Colorado College, 1992) and exercise science (M.S. Colorado State University, 1996), Dr. Subudhi received a PhD from the University of Utah in 2000 for his work on exercise-induced oxidative stress. From 1997 to 2003 he was a research scientist at The Orthopedic Specialty Hospital, in Salt Lake City, UT, where he ran physiological services for the US Ski, Snowboard, Speedskating teams through the United States Olympic Committee Network Affiliate program. He then completed post-doctoral training at the University of Colorado Health Science Center in the areas of altitude medicine and physiology. Dr. Subudhi joined the faculty at UCCS in 2005 to continue studying the effects of hypoxia and exercise on cerebral blood flow and oxygenation through the University of Colorado’s Altitude Research Center. In 2009, he was recognized as a Fellow of the American College of Sports Medicine (FACSM) and elected to the regional ACSM board of directors. He teaches lecture and laboratory courses in human physiology within the Biology Department.
Synopsis of presentation:
The aim of this presentation is to describe the doctoral training program for anatomy teacher-scholars at the University of Utah, School of Medicine. The rationale for the program is to respond to the manpower shortage of medical gross anatomy, histology, embryology, and neuroanatomy teachers that is anticipated to begin after 2010. Expectations of traditional doctoral training programs are addressed by formal training in educational theory and outcomes research. Our program provides training in educational research theory because advancement in academic medicine is dependent on research scholarship. An IRB-approved, educational research project is required, for which the results are to be submitted as a first-authored, peer-reviewed manuscript. Another requirement is innovation of teaching tools, such as paper or electronic textbooks, dissection guides, or educational software. Trainees also take and teach medical gross anatomy, histology, embryology, and neuroscience. Complimentary training in ethics of research, institutional review board (IRB) protocols, scientific writing, scientific lecturing, journal club, research-in-progress, and biostatistics is provided. Trainees also give practiced lectures to the medical students. For teacher-scholars to advance academically, institutional policies and procedures for faculty assessment and advancement should include recognition of and reward for teacher-scholar contributions and accomplishments. Our institution, like other institutions, created a faculty track for teacher-scholars, which reflects the growing change in attitude about the value of teaching in medical schools. Further programmatic growth requires curriculum integration with the College of Education, and establishment of endowed funding for trainee stipends. [Support from Department of Neurobiology & Anatomy Medical Scholars Program]

Dr. Albertine graduated magna cum laude in biology from Lawrence University, Appleton, Wisconsin, in 1975. He graduated with a doctoral degree in human anatomy from Loyola University of Chicago, Stritch School of Medicine, in 1979. Post doctoral training was at the Cardiovascular Research Institute, University of California, San Francisco (1980-83). Dr. Albertine held faculty appointments at the University of South Florida, the University of Pennsylvania, and Thomas Jefferson University before joining the faculty at the University of Utah in 1993, where he is Professor of Pediatrics, Medicine, and Neurobiology & Anatomy. Dr. Albertine has taught human gross anatomy for 36 years and was course director of the medical gross anatomy course at the University of Utah from 1996-2006. His research topic is acute and chronic lung disease, with emphasis on neonatal chronic lung disease, and is supported by NIH grants. He is a permanent member of the Lung Injury, Repair and Remodeling Study Section at NHLBI. Starting in January of 2006, Dr. Albertine became Assistant Dean for Faculty Administration at the School of Medicine, after serving 7 years on the School of Medicine Appointment, Retention, Promotion, and Tenure Committee, including 2 years as committee chairman. Dr. Albertine is a participant in the AAMC’s Group on Faculty Affairs. He is Editor-in-Chief of The Anatomical Record.
**Update Seminar #5**

**Dr. Victor Spitzer**

**Topic:** The Visible Human Revisited-Anatomical Visualization and Medical Procedure Simulation  
**Monday, May 31, 10:30 am- 11:45 am**

Contact Information: Dr. Victor Spitzer  
761 Madison  
Denver, CO 80206  
vic.spitzer@toltech.net

Dr. Spitzer is Professor of Cell and Developmental Biology at the University of Colorado School of Medicine where he teaches in the medical gross anatomy course, develops education resources for anatomy and conducts research in the preparation and utilization of 3D anatomy. He is Director of the University of Colorado Center for Human Simulation, a Center that specializes in the development of 3D anatomical data and its evolution and development as a foundation for medical simulation.

He holds undergraduate degrees in Mathematics, Physics and Chemistry and graduate degrees in Nuclear Engineering and Chemistry. A post-doctoral fellowship directed his career into Medical Physics at the University of Colorado. After thirteen years in clinical practice and research in Nuclear Medicine and image processing he moved to the basic sciences with a specific interest in 3D anatomical data and visualization. This move resulted in his partnership with Dr. David Whitlock to win the development contract for the National Library of Medicine’s Visible Human Project and establish both career and business opportunities extending the utility of this data.

His academic and entrepreneurial career continues to build on Visible Human and similar data, presenting both form and function, visually, audibly and haptically through the power of computer analysis, simulation and visualization. This work is manifest in curricula for medical, dental, nursing and allied health education and experience.

In 1998 he formed, with three other academic partners, a medical education company, Touch of Life Technologies, Inc. (ToLTech) that produces the VH Dissector for efficient and comprehensive anatomical visualization and medical procedure simulators that provide real experience through virtual patients.

His work will be complete when human anatomy, physiology, pathology, development, and evolution are coherently and seamlessly available in a virtual world for learning, design and research – the goal of the Center for Human Simulation. In all probability his life will be complete before his work.
Dr. Tod Clapp  
Colorado State University  
Sponsored by  
the American Society for Microbiology (ASM)  

Topic: Teaching Undergraduates the Basal Ganglia Circuits  
Monday, May 31, 1:15 pm - 2:15 pm  

Contact Information: Tod Clapp, PhD  
Dept. of Biomedical Sciences  
200 West Lake St., Colorado State University  
Fort Collins, CO 80523  
970-491-2583  
tod.clapp@colostate.edu  

I received a B.S. in Biology from Colorado State University in 1996. I then worked with traumatic brain injury patients for two years before returning to Colorado State University to complete a Masters degree in Anatomy and a Ph.D. in Neuroscience. My Ph.D. work involved second messenger signaling cascades in neuroepithelial cells. After a four year post doctoral fellowship I gained an instructor position in the Neuroscience Division at Colorado State University and recently became an assistant faculty member.
Notes:
Synopsis of Lecture

Title: What Can You Learn about the Cardiovascular System by Studying Rhythms in Sympathetic Nerve Activity?

No one would argue that there is a direct relationship between the level of activity in our sympathetic nerves and the level of our blood pressure. Also, likely no one would disagree that a part of the brain called the rostral ventrolateral medulla contains a key group of nerve cells that are a major/critical source of the level of activity in sympathetic nerves. But throughout my career, I have taken a somewhat different approach to studying how the brain controls blood pressure. My work has focused on how rhythms in sympathetic nerve activity ultimately impact our blood pressure. The major aim of my lecture will be to help you gain a better appreciation for the relevance of central sympathetic rhythm generators. You will learn about techniques used to detect rhythms in physiological recordings, and you will find out that there are various rhythms in sympathetic nerve activity depending on the physiological state and that several parts of the brain contribute to making these rhythms. You will see how manipulating these rhythms has allowed us to understand their role in control of cardiovascular function. In the end, you will hopefully be convinced that it is not enough to just think about the level of activity in sympathetic nerves in determining the level of your blood pressure.

Biographical Sketch

Sue Barman was born in Joliet, IL in 1949, and she received a BS in Biology (’71) and a PhD in Physiology (’75) from Loyola University in Chicago. She then went to Michigan State University (MSU) where she has risen through the ranks from Postdoctoral Research Associate to Professor. Sue has had a career long interest in central control of the cardiovascular system, with an emphasis on studying the role of various brainstem structures in control of the rhythmic properties of sympathetic nerve activity. Her work has been continually funded by the National Institutes of Health, including a prestigious MERIT Award (1995 - 2005). Sue is proud of her active participation in the American Physiological Society, and she has served as Chair of several of its committees (Women in Physiology, Section Advisory Committee, Committee on Committees) and on its Council. She also serves on the editorial board of two APS Journals. Sue received the 2009 MSU College of Human Medicine Distinguished Faculty Award in recognition of outstanding scholarship, service, and teaching. Sue teaches undergraduate, graduate, and medical students and covers topics including the autonomic nervous system, cardiovascular system, pain, and the neurobiology of disease. Teaching formats include online modules, large- and small-group lectures, clinical problem based learning, and journal clubs.
Vickey Trammell grew up in Ohio next to an old mansion and six acres of trees and gardens. In the summers she and her family lived in a cabin surrounded by farmland and forest. Along with her sister and brothers she rode Ginger (the pony) through all the fields and forest. It was only natural that she majored in Biology, graduating with a BS from Baldwin Wallace College in Berea, Ohio. After several years of junior high school teaching, a marriage and birth of twin boys and then another boy, she received her MA degree from University of Colorado Boulder in 1975.

Vickey started teaching at Arapahoe Junior College (now Arapahoe Community College) in 1972 as an adjunct instructor while the boys were growing up. Jim Trammell, her husband, started teaching at the college in 1967. She changed to full time in 1987 and served as department chairman from 1997 to 2002. Jim and Vickey shared the Faculty of the Year award in 1996. They were members of the same department. Jim retired in 1997.

Vickey is a broadly trained biologist with interest in every field. While at ACC she taught nonmajors biology, remedial classes, ecology, zoology, botany and was head teacher for the majors track and A&P. Her claim to fame started in 1987 when she became a member of NecroSearch, an organization of scientists and law enforcement who are experts in finding clandestine graves of homicide victims.

After retirement in 2002, she continued teaching until a year ago. However, she keeps up her connections with the college by assisting in course development, teaching special sections, assisting with cadaver classes, singing in the choir and playing violin in the string orchestra. Vickey is well known in the Denver area as an innovative, exciting, creative teacher. It is obvious that she knows the material and loves the subject and the students. Vickey and Jim can’t go anywhere without meeting former students. She started her career as a plant ecologist and ended it as head teacher for A&P. Now she has gone back to her roots (pun intended) and is directing ecological research at nearby Roxborough State Park.

After 30+ years in the lab, the field and the lecture hall, Vickey says that almost everything that could happen did, and situations that couldn’t happen still happened. The stories are strange, crazy, funny, uplifting, beautiful, sad, heart-warming and courageous. She will share some of these true tales with us at the conference banquet.

Stories from the Anatomy Pits:

30 Years of Bones, Blood and Guts
**Posters**

**Nick Despo**  
Thiel College  
Professor of Biology  
Co-Author: Donald Kelly, Committee Chair and Professor of Biology

**Animal Use Committee Update**  
This poster will serve to update the HAPS Annual Conference attendees on the activities of the committee. These include a presentation of the results of the survey conducted last year regarding animal use and dissemination of information regarding animal use in classes as well as research. The poster location will also be a survey site for the committee at the conference as well as a distribution point for the HAPS animal use policies.

**Howard K. Motoike**  
La Guardia Community College  
Assistant Professor  
Co-Author: Ilada Wimana

**The Science Study Hall at LAGCC: A Model Setting to Improve the Success of Anatomy and Physiology Students at a Large Urban Community College**  
The study of Anatomy and Physiology (A & P) is a difficult and challenging experience for many students. The trauma is further magnified in a large urban institution such as La Guardia Community College (LAGCC) where many of the students are foreign born, speak English as a second language and often less prepared in math and sciences. Students' at LAGCC have been assisted since 1997 from a federally funded Science Study Hall which serves as a haven for students to allow them to review and study laboratory materials and specimens outside of their normal class time. Students may also obtain tutoring assistance from academic peer tutors that have previously completed the courses with superior marks. Despite decreased funding paralleled with a surge in student enrollment the Study Hall still plays a vital role in the academic survival of A & P students at LAGCC. End of semester statistics demonstrate that Study Hall users have higher grades and retention numbers compared to their non Study Hall user counterparts. These numbers are even more pronounced in the second semester of the A & P sequence in which a larger percentage of students patronize the Science Study Hall.

**Haris Ali**  
University of North Dakota  
PhD Student  
Co-Author: Jon Jackson

**Assessing a curricular module in radiographic clinical anatomy imaging**  
A number of radiological modalities is used for diagnostic, interventional, and therapeutic purposes today, such that an understanding of clinical anatomical imaging might now be considered foundational for students success in anatomy and health sciences. As the health science curriculum at our institution moves increasingly to that of problem-based learning, we are working to develop materials that teach the basics of clinical imaging and fit seamlessly into this new method of teaching. We present here pilot data from a year-long study in which students were exposed to a clinical imaging instructional module. We report the greatest effects the instruction had on student understanding of fundamental concepts of clinical anatomy i.e., image section, imaging modality, and musculoskeletal compartment anatomy in normal and diagnostic radiological images. Following the clinical anatomy module, students showed largest gains in their ability to identify approximate levels of axial sections, functional musculoskeletal compartments, and to a much lesser extent, the type of imaging modality used to generate the image. Students demonstrated a difficulty in transferring/translating their knowledge of detailed anatomy obtained from cadaver specimens, and identify these same structures to a detailed level on clinical images.
Karen A. McMahon  
The University of Tulsa  
Instructor

**The 2D:4D Ratio - Investigation of a Sexually Dimorphic Trait in the Human Skeleton**

The ratio of the length of the 2nd digit (index finger) to the 4th digit (ring finger) is a sexually dimorphic trait. Males have a lower 2D:4D ratio because the 2nd digit is usually shorter. In females the 2nd and 4th digits are generally of equal length. A lower 2D:4D ratio reflects a higher fetal testosterone level. 2D:4D ratio can be observed by the end of the first trimester and does not change over the life span. The 2D:4D ratios have been correlated with certain diseases, careers, skills in sports, and mental ability. Students hypothesize expected differences and collect data in lecture or laboratory. Digit lengths are easily measured with a metric ruler or calipers directly or from a photocopy. Students postulated that as athletes often have superior spatial ability, a trait correlated with testosterone levels, then athletes of either sex would have lower 2D:4D ratios in comparison to students who are non-athletes. Mean overall 2D:4D ratios for female athletes (0.9683) were lower than those of female non-athletes (0.9845) and 2D:4D ratios for male athletes were lower (0.9599) than those of male non-athletes (0.9709). This exercise brings an investigative approach to the study of the human skeleton.

Karen McMahon, Co-Chair, HAPS Safety Committee  
The University of Tulsa  
Instructor  
Co-Author: Linda Nichols

**HAPS Safety Committee - Case Studies in Safety**

During the 2000 HAPS Annual Conference at Charlotte, interested HAPS members organized a Safety Committee to address issues of student and instructor welfare in the human anatomy & physiology laboratory. The first goal of the Safety Committee was to create the HAPS Safety Guidelines (released in 2005) as the standard for promoting safe practices in teaching the human A&P laboratory. During 2009-2010, the HAPS Safety Committee continues to update and expand the Safety Guidelines and serve as the authority on issues of safety for the HAPS membership. The Safety Committee is currently working on writing and publishing case studies about safety issues in the A&P laboratory to promote safety awareness. The Safety Committee invites the HAPS membership to share their expertise and experiences with safety in the A&P laboratory during the scheduled committee meeting at the 2010 Annual Conference in Denver.

Ann Gathers  
The University of Tennessee at Martin  
Assistant Professor

**The Effectiveness of a Service-Based Learning Project in an Undergraduate Human Anatomy and Physiology Course**

Students from an introductory human anatomy and physiology course participated in a service-learning project focusing on aging and its effects on the integumentary, skeletal, muscular, and nervous systems. For this optional assignment, students read and summarized three approved related articles, volunteered for a minimum of two hours at an assisted living facility, and wrote a summary that incorporated anatomy and physiology information from class and the assigned articles with their observations during their service. Two primary goals of the project included increasing comprehension and application of course material and increasing student interest in and comfort levels with the geriatric population. Forty-eight students from three sections completed a self-report survey at the project's conclusion. Eighty-eight percent indicated that they sufficiently to extensively applied what they learned in class to those that they served. Surveys also assessed pre and post-project levels of interest and comfort in working with the geriatric population. Post-project, twenty-eight students reported an increased interest in working with the geriatric population. Twenty-four students reported increased comfort in working with the geriatric population. Overall, 94% of students rated their experience as rewarding to extremely rewarding. This project demonstrates how service-based learning can be incorporated effectively into a college science course.
Jackie Carnegie, PhD, M.Ed.
University of Ottawa
Assistant Professor
Co-Authors: Marco Iafolla, M.Sc., Hannah Weinstangel

**Students use Online Formative Exams to Self-Test their Basic Science Knowledge within the Context of Clinical Scenarios**

Undergraduate medical and health science students welcome opportunities to self-test within the context of clinical scenarios. QuandaryR (http://www.halfbakedsoftware.com/quandary.php) was used to construct interactive exercises allowing students to practice applying their anatomical, physiological and pathophysiological knowledge to various medical conditions. These basic sciences were also incorporated into clinical-decision-making-style questions (CDMQs) by allowing multiple correct answers for these questions and assigning different values (even negative ones) to each response. The goal was to develop weekly formative examinations that first-year medical students could use regularly to self-assess and to continue learning. The exams were initially created as word documents with curricular learning objectives guiding the development of questions, answers, and instructional feedback. Each exercise consisted of MCQs, CDMQs and T/F questions. The exercises were inserted into Quandary and the scoring customized to reward correct answers, penalize seriously incorrect choices and block students from choosing correct choices more than once. Each student received a final score upon completion and could retry each exam as often as needed. Student use of the exercises was tracked via Google Analytics. The flexibility of Quandary supports continued learning during practice exams and allows students to self-assess their applied basic science knowledge without penalty before writing summative exams.

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Everett Johnson
Parker College of Chiropractic
Assistant Professor

**Report of Anatomic Variation of the Anterior Compartment of the Leg: Anterior Peroneocalcaneous**

**Background:** Muscular variations in the leg are well reported in the literature. The most common variations found in the literature are peroneus quadratus in the lateral compartment, peroneus tertius in the anterior compartment and the flexor digitorum accessorius longus in the posterior compartment. **Methods:** A bilateral, well-defined accessory muscle in the anterior compartment of the leg in a 52 year old female Caucasian was found during routine dissection in the gross anatomy laboratory. A review of the literature was performed to identify any previous findings of a similar muscle. **Results:** Bilaterally, this muscle attaches to the upper, anterior shaft of the fibula. The tendon of the muscle begins at approximately the distal half of the tibial shaft. The tendon travels anterior to the lateral malleolus of the fibula and courses inferiorly and posteriorly to blend with the inferior fibular retinaculum, and continues, to insert on the fibular trochlea of the calcaneous. **Discussion:** The placement of this muscle in the anterior compartment and the course of its tendon have not been previously documented in the literature. **Conclusion:** Clinicians should be aware of anatomic variations of the leg and ankle for proper diagnosis and treatment of chronic leg and ankle issues.

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Robert Crocker
New York Chiropractic College
Interim Director, M.S. in Human Anatomy & Physiology Instruction Program
M.S. in Human Anatomy & Physiology Instruction

Commencing in September of 2009, the New York Chiropractic College, a fully accredited multi-disciplinary healthcare education institution, will introduce a new graduate degree program: the Master of Science in Human Anatomy and Physiology Instruction (MSHAPI). This unique program will be offered online to a very select audience- terminal healthcare degree holders and academic biologists teaching, or preparing to teach, anatomy and physiology (A&P) in the undergraduate college and university setting. The MSHAPI program consists of 36 credits delivered online over two calendar years, and includes 18 credits of Human Anatomy & Physiology Instruction, 12 credits of Instructional Theory and Practice, and 6 elective credits. HAPS-I graduate credits, granted through the University of Washington, are eligible for transfer as elective credits. The MSHAPI program will leverage the A&P competencies acquired by the candidate in prior educational preparation by combining content expertise with instructional theory and practices, creating an A&P instructor who is highly effective across the full spectrum of multiple system A&P.
Success with Supplemental Instruction in Anatomy & Physiology

A Supplemental Instruction (SI) component was added to one section of Anatomy and Physiology I during the spring 2009 and fall 2009 term. SI is a learning enhancement program that increases student retention and grades in historically difficult courses by providing a series of scheduled weekly review sessions. The sessions are facilitated by a SI leader, who is a student that has recently taken the course and achieved a high final grade. Unlike tutoring or lecture reviews, SI sessions are designed to organize and improve the ways in which students prepare for class by encouraging group collaboration and study skills. At the completion of the spring 2009 semester, the average GPA of students who attended SI was 3.2, while the average GPA of students who did not attend SI was 1.8, and in the fall 2009 semester, the average GPA of students who consistently attended SI earned an average GPA of 3.2, while those who did not attend SI earned an average GPA of 2.0. These numbers suggest that SI can significantly improve student grades in Anatomy & Physiology I.

Improving Recruitment and Retention of Disadvantaged Pre-Health Students Through Enhanced Summer Program

A major part of the Arizona Health Careers Opportunity Program was to conduct a summer recruitment and retention program for HCOP eligible students. The primary goal of the Pre-Health Professions Education and Research Program (PREP) was to provide an enhanced science curriculum during the summer for freshman and sophomore pre-health professions students from disadvantaged backgrounds. We developed a new assessment tool based on measuring changes in self-efficacy for science-related abilities. Students showed improved self-efficacy in several areas related to academic and professional development. Mean self-efficacy scores for individual students correlated significantly with their mean Learning and Study Strategies Inventory (LASSI) results, indicating that self-efficacy is associated with the LASSI inventory items that are related to predicting academic success.

Human Cadaver Prosection Program

The annual International Human Cadaver Prosection program at Indiana University, Northwest in Gary, Indiana is an innovative, educational, service learning opportunity. Come learn about this evolving program spearheaded by Earnest F. Talarico Jr., PhD.; Western Kentucky University Assistant Professor Dana Emberton-Tinius and nursing student, Cecelia Nugent. During this two-day hands-on anatomy workshop, they helped prepare six anatomical donors for the IU-NW medical school’s upcoming gross anatomy classes. Learn what it’s like to serve on the prosection team as well as how to become a team member yourself.

Baccalaureate Nursing Students’ Perceptions of Anatomy and Physiology: An Interdisciplinary Study

Anatomy and physiology is the foundational content of any nursing program, yet nursing students may not view it as relevant to their majors. The aim of this study is twofold: to identify baccalaureate nursing students’ perceptions of the relevance of anatomy and physiology in their nursing education before the start of the course and determine changes in their perception of relevance of anatomy and physiology at the end of the course. This poster presentation will discuss the design, methodology, results and lessons learned during this research project recently conducted during the spring 2010 term.
**Comparative assessment using the HAPS comprehensive A&P exam**

This poster project demonstrates the comparative value of using the Human Anatomy & Physiology Society’s comprehensive exam in undergraduate human anatomy and physiology courses. As an assistant professor of A&P at Washington State Community College in Marietta, Ohio, we have found the HAPS comprehensive exam to be a valuable tool in our assessment processes. Our students take our two course sequence of human anatomy and physiology while studying in the fields of nursing, physical therapy, radiology, respiratory therapy, and medical technology. By utilizing the comprehensive exam, we are able to analyze results from quarter to quarter and year to year in all areas of human anatomy and physiology. Using the database, which is a compilation of returned results from colleges and universities utilizing the test, we have found that our students have scored within the average of two and four year colleges/universities utilizing this test. These results give us an external measurement tool from which to build an assessment portfolio in our biological sciences program, as well as providing valuable feedback to our health science programs.

**Brian W. Witz, Ph.D.**
Nazareth College of Rochester
Professor/Dept. Chairperson

**Hybrid Human Anatomy and Physiology Course - Online Lecture Using CourseCompass & Traditional Laboratory**

For the past 6 summers I have offered a 2-semester sequence of Human Anatomy and Physiology, primarily for nursing and physical therapy students, in a hybrid format. I make extensive use of asynchronous CourseCompass assignments (w/required chapter checklists submitted for credit) for the online lecture, coupled with regularly scheduled online chats, and highly customized PowerPoint presentations. CourseCompass allows for statistical tracking of the time that each student spends on a given, interactive assignment. Chapter quizzes, which contribute approximately 15% to the final grade, are given online, and unit examinations are administered face-to-face in the laboratory environment. The experiential, hands-on laboratory course is delivered in the traditional laboratory classroom. Many of the students that take this course sequence required remediation because they did not pass the course when it was delivered in the traditional format. Student success rate in both lecture and laboratory courses was near 100%, and feedback from students was overwhelmingly positive. Students were particularly appreciative of the flexibility of the lecture scheduling, and they also found that they were much more engaged in the material in the distance learning format. Future modifications to the online lecture will include voice-over PowerPoint presentations using Adobe Presenter software.

**John Pellegrini**
St. Catherine University
Professor of Biology
Co-Authors: Carol Goulet, Lauren Brin, Kate Milner, Lynda Szymanski

**Associations between body satisfaction and physiological responses to media images of extremely thin women**

Concerns about body image among women are normative in our culture, and media influences have long been considered a contributing factor. We investigated the physiological and psychological reactions of women to the presentation of images of thin women and images of neutral objects. Physiological measurements included: heart rate, salivary cortisol concentrations and electrodermal activity. Psychological measurements included subjects completing visual analogue scales assessing emotional states including anger, self-confidence, depression and satisfaction with appearance. Preliminary analysis of the current data set indicate that, consistent with the psychological literature, viewing images of extremely thin models leads to decreases in self-confidence and decreases in satisfaction with physical appearance. Such stimuli also seem to evoke more frequent and larger electrodermal responses than neutral images do, suggesting increases in activity of the sympathetic nervous system.
Student Outcomes in A&P: The Allied Health Learning Community

Learning communities have purported to increase academic performance and retention in college students. A study of academic outcomes in first-year anatomy and physiology students in one learning community was conducted in Summit College at the University of Akron. After participating in a learning community for allied health majors, students showed higher grades in their first anatomy and physiology course, higher GPA's, and greater retention during the following semester. Surveys shed light on the big questions of why learning communities foster student success. First-year students reported more interaction with peers, faculty, and tutorial services as a result of learning community participation.

Redesign of physiology laboratories to facilitate student-based inquiry

Small-group learning improves student understanding of lecture material and the ability to apply physiological concepts to design and implement research protocols, and to critically analyze collected data. Traditional instructor directed laboratory exercises are conducted to familiarize students with the equipment, vagaries of experimental design, data collection, statistical analysis and awareness of IRB/IACUC requirements. Given this foundation, student teams then examine a problem of their own interest. They conduct a literature search, put forth a research proposal, conduct the experiments and present their findings. Innovative student generated research projects demonstrate the ability of students to adapt traditional experiments to embrace their specific research projects. Anecdotal feedback from course evaluations and attitudes expressed on student surveys indicate that this approach fosters greater confidence in understanding physiological principles and scientific processes. One of the limitations expressed was the lack of time available for design and implementation of their projects. Consequently, the laboratory component will be re-structured, increasing the time available for students to design, conduct, analyze and interpret their own findings.

The Effects of a Relaxation Breathing Exercise on Exam Performance in a General Biology I Course

Test anxiety is prevalent among college students and has been shown to adversely affect exam performance. Relaxation techniques have been shown to improve cognitive function, reduce stress and possibly blunt the affects of exam anxiety. This study was conducted to examine the benefits of performing a breathing relaxation technique minutes before taking an exam. The study was conducted in a General Biology I course offered at Friends University in the fall of 2009. The class was split into two groups. One group did not participate in the relaxation exercise prior to the exam, and the second group participated in the relaxation technique. Four exams were administered to the two groups of students. A survey was also administered to the experimental group to assess their perceptions of the benefits of the relaxation exercise. The average of the exam scores were analyzed for statistical differences using a two-level nested analysis of variance and were found not to be statistically different. This was consistent with the perceived benefits of the exercise on exam performance. Most students, however, liked the relaxation exercise and thought it benefited them, with at least half the students in the experimental group wanting to continue the exercise before exams.

Starting a Human Cadaver Program: The First Year

Starting a human cadaver program can seem daunting. Using a human cadaver instead of a cat or fetal pig in a human anatomy lab is the preferred method of teaching about the human body, but how do you get started? I found that starting a cadaver lab is really not as hard as one might think. A colleague and I did some research and visited several schools that use human cadavers. Our lab now has one cadaver and student response has been very positive. We are looking into getting a second cadaver.
The HAPS-Institute (HAPS-I): A new approach to continuing education for instructors of Anatomy & Physiology

The HAPS-Institute offers in-depth, discipline-specific graduate credit courses to train and support undergraduate A&P instructors. Courses place strong emphasis on pedagogical strategies that foster undergraduate student critical thinking skills & include active review of core concepts, integration of recent discoveries, exploration of established, new, & emerging methods of teaching and learning, and peer-reviewed development of a final teaching product. Courses are taught online, in the laboratory with an online preparatory component, or in a hybrid format. Results indicate the HAPS-I course experience bolsters the professional expertise of instructors and improves the learning experience of their students. Instructors demonstrated improvement in comprehension of the subject matter and confidence in using the teaching techniques modeled in the course. The effort instructors spend on module development coupled with the input from peer-review classmates has contributed to ownership and incorporation of modules in their own classes. We are continuing to assess ongoing needs to determine content topic areas, and refine course models to strengthen the foundation for future programming.

Mari K. Hopper, Ph.D.
University of Southern Indiana
Assistant Professor

Student Enrollment in a Supplement Course for Anatomy and Physiology Results in Improved Retention and Success

Anatomy and Physiology 1 (A & P 1) has one of the highest failure and withdrawal rates on campus. To address academic success a course to supplement A & P 1 (Supplement) was developed and taught. Primary goals for the Supplement course included: 1) Early identification of students at risk for failing or withdrawal; 2) Understanding the demographics of students; 3) Using a multifaceted approach in the classroom; 4) Developing a strong sense of community. A variety of activities were incorporated to address the needs of a diverse group of students. A two part survey was administered during the first and last weeks of class. The survey assessed demographics of the students and factors known to affect student academic performance. Results indicated that students who participated in the Supplement course achieved a grade of C or better at a much higher rate than those students who did not participate (63% vs. 38%). Students enrolled in the Supplement course were also retained at a higher frequency (89% vs. 64%). Survey results indicate that improvements in student success and retention were likely due to changes in student skills and behaviors as a result of participation in the Supplement.

Judi Nath, Ph.D.
Lourdes College
Chair, HAPS Foundation Oversight Committee

Information Poster for the Foundation Oversight Committee

The Foundation Oversight Committee’s mission is to establish and manage endowed funds for the Society, to oversee the activities and operations of the HAPS Foundation, and to advise the HAPS Board of Directors on prudent and proper investment of Foundation money. The committee also publicizes the Foundation and solicits funding.
Michael Kopenits, D.M.D.
Amarillo College
Chair, Grants and Scholarship Committee

Grants and Scholarship Committee
The Grants and Scholarship Committee reviews applications and awards monies for the following: Robert B. Anthony Scholarship – to encourage instructors during their first three years of teaching anatomy and physiology to network with seasoned colleagues by attending the annual HAPS Conference. Monetary award for registration and banquet ticket for annual conference. Adjunct Faculty Scholarship – to provide instructors of anatomy and physiology who have adjunct (part-time) status at their institution and are in their first three years of teaching anatomy and physiology the opportunity to network with seasoned colleagues by attending the annual HAPS Conference. Monetary award for registration and banquet ticket for annual conference. Faculty Grant – monetary award up to $1500.00. Student Grant – monetary award up to $750.00; HAPS I Scholarship – monetary award for 50% of HAPS I tuition reimbursement.

David Evans
Penn College
Chair, HAPS Public Affairs Committee

The HAPS Public Affairs Committee
The HAPS Public Affairs Committee shares useful information about: the sciences of anatomy and physiology, medical technology, and the art of teaching.

Ron Gerrits
Milwaukee School of Engineering
Associate Professor and Chairperson of the HAPS Curriculum and Instruction Committee

HAPS Curriculum and Instruction Committee: Developing Resources for Instructors
The HAPS Curriculum and Instruction (C&I) Committee focuses its efforts on the development and/or compilation of resources that are useful for teaching A&P. Current and ongoing projects include the development of learning outcomes and compilations of useful software and websites. Future projects are expected to include a compilation of teaching activities to meet the learning outcomes. Come learn more about the committee – new members are always welcome.
Come to a Happening Event!

Location: Strata Bar, Main Floor, Hyatt Regency Denver
Date/Time: Sunday, May 30, 5-6 PM

Join Pearson Benjamin Cummings for a Pre-dinner Appetizer and Cocktail Reception!
Drop by for some fun, hors d’oeuvres, and refreshments! Fill out a “Teaching Idea of the Year” entry form for your chance to win an iPod Nano! The drawing for the winner will take place at 5:45 PM prior to the buses leaving for dinner at the Denver Museum of Natural Science.

Help us celebrate the launch of MasteringA&P!
All of our unparalleled media tools are now assignable in one easy-to-use place!

- Get Ready for A&P Online gets your students up to speed for the A&P course.
- A&P Flix™ are movie-quality 3D animations that teach key concepts in A&P and invigorate your classroom lectures.
- Interactive Physiology® 10-System Suite (IP-10) includes interactive tutorials that help your students understand tough physiology concepts.
- Practice Anatomy Lab™ (PAL™) 2.0 helps your students study for their lab practical exams 24/7. Of students surveyed who use PAL 2.0, 90% report one or two letter improvement in their grades.
- PhysioEx™ 8.0 supplements the wet-lab experience, providing laboratory simulations that illustrate key lab activities.

For more information on our titles and media, please visit our catalog at www.pearsonhighered.com/ap
Come to a HAPPENING Booth!

LOCATION: Pearson Benjamin Cummings Booth  
TIME: 7:30-8:30 AM during breakfast

Meet our authors!

Sunday, May 30
- Elaine Marieb, Human A&P, 8e; A&P, 4e; Human Anatomy, 6e; Human A&P Lab Manual, 10e; Essentials of Human A&P, 9e
- Katja Hoehn, Human A&P, 8e; A&P, 4e
- Patricia Brady Wilhelm, Human Anatomy, 6e
- Susan Mitchell, Human A&P Lab Manual, 10e
- Dee Silverthorn, Human Physiology: An Integrated Approach, 5e
- Lori Garrett, Get Ready for A&P, 2e
- Nora Hebert, Practice Anatomy Lab™ 2.0
- Ruth Heisler, Practice Anatomy Lab 2.0
- Andrew Lokuta, PhysioEx™ 8.0
- Lori Smith, PhysioEx 8.0

Monday, May 31
- Ric Martini, Fundamentals of A&P, 8e; A&P, 2e; Essentials of A&P, 5e; Human Anatomy, 6e
- Ed Bartholomew, Essentials of A&P, 5e
- Bob Tallitsch, Human Anatomy, 6e
- Mike Timmons, Human Anatomy, 6e
- Cindy Stanfield, Principles of Human Physiology, 4e
- Mike Wood, Laboratory Manual for A&P, 4e
- Stephen Sarikas, Laboratory Investigations in A&P, 2e

Participate in an art contest!

Begins Sunday, May 30, 7:30 AM; ends Monday, May 31, 2:00 PM

Please stop by the Pearson Benjamin Cummings booth to enter our annual art contest. Details and supplies provided at the booth. The HAPS participant with the best entry will win an Apple iPad™! The winner will be announced on Monday, May 31 (3:30–5:00 PM) along with the HAPS door prizes.
Tuesday, June 1

HAPS Institute Workshops: (open to registered HAPS-I course participants only)
Session: 901: Room M 4140, Tuesday, 9:30-4:00 (Full Day), The Molecular & Cellular Basis of Disease
Session: 902: Room M 4760, Tuesday, 10:45-12:15 (90 minutes), Advances in A & P

Session: 101, Room M 3690, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: Educating the “Net Generation”: Experiences from online physiology course
Abstract: The Human Physiology online course offered by the Department of Physiology at the University of Toronto (www.physiology.utoronto.ca) offers a quality learning experience, convenience, and flexibility. The course is delivered on Blackboard with captured videos and has a supportive, user-friendly course environment. This online course gives students flexibility in terms of time and location, allowing self-directed learning. The online course consists of didactic lectures and “virtual labs” that involve computer simulations. Overall, our results suggest that the online course was as effective as the in-class course. Furthermore, online course fostered the students’ ability for critical thinking and promoted problem solving skills.
Presenter: Dr. Chris Perumalla
Department of Physiology, University of Toronto
Co Presenter: Dr. Nohjin Kee

Session: 102, Room A 1100, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: Online Anatomy & Physiology
Abstract: With growing enrollment and declining budgets, lab space is always at a premium. Can an online anatomy & physiology course provide a suitable alternative? Come see what you think of a new 2-semester combined anatomy & physiology course that utilizes the most complete, detailed and accurate 3D model of human anatomy.

Presenter: Betsy Brantley, Science Professor
Lansing Community College

Session: 103, Room M 1950, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: The First Day of Class
Abstract: Psychologists claim that you form an impression within the first few seconds. The A&P instructor faces a similar window of opportunity: the first day of class. How can we take advantage of the first day to promote maximum engagement, a sense of critical curiosity, and personal responsibility for learning? We’ll pilot my own first day itinerary. We’ll talk about strategies including “beginner’s mind”, “live & breathe A&P”, “A&Pers”, “VARK daily”, “the 3 mits”. We will identify possibilities for implementation as well as pitfalls and barriers. Participants are encouraged to bring their own first-day plans for group comment.

Presenter: Chris Boudrie, Assistant Professor, Biology & Health Sciences
Lourdes College

Session: 104, Room A 1420, Tuesday, 9:30 - 10:30 (60 minutes) *repeated as 504*
Presentation Title: Do Your Students Understand the Anatomy of the Autonomic Nervous System?
Abstract: We will present an approach using inexpensive materials that can be adapted to the qualifications of your students. For this hands-on session, presenters will provide materials and reference figures from commonly used human anatomy and physiology textbooks for a simple example of this approach.

Presenter: Margaret McMichael, Associate Professor of Biology
Baton Rouge Community College
Co Presenter: Andrea Scollard, Instructor of Biology
Session: 105, Room M 3720, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: **Diabetes as a Tool to Integrate Systems Physiology**
Abstract: Integration and case studies are hot topics in physiology. Because of its wide-spread effects on the body, diabetes can be used in the classroom to propagate discussion that integrates the organ systems and at the same time explains a disease that is reaching epidemic levels in the United States and the World. Most students know somebody with diabetes, so immediately the topic becomes of personal interest. In this workshop, a review of key concepts in diabetes will be intertwined with discussions on how to use this knowledge in the classroom.

Presenter: Cindy Stanfield, Associate Professor
University of South Alabama

Session: 106, Room M 3070S, Tuesday, 9:30 - 10:30 (60 minutes) *repeated as 509*
Presentation Title: **Basic Heart Sounds**
Abstract: This program presented by a cardiologist gives a unique approach to understand normal and abnormal heart sounds. By using both site, sound and the cardiac cycle to incorporate these sounds into long term memory.

Presenter: Lance Wilson D.O., Professor
Triton College & Dominican University

Session: 107, Room M 3130, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: **Strategies for Building a Better Syllabus**
Abstract: Do you have a terrific cell phone policy in your syllabus? Do you struggle with a policy for make-up exams and missed laboratory exercises? Are you a new faculty member whose syllabus is a work-in-progress or are you a seasoned educator with a syllabus that has stood the test of both time and technology? Either way, bring your syllabus and your ideas to this workshop! Share your best strategies for building a syllabus with your colleagues. Participants should bring a copy of their syllabus with them or email an electronic version to away1@lhup.edu ahead of the workshop.

Presenter: Amy Way, Professor
Lock Haven University

Session: 108, Room M 3610, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: **Got Honors? An Embedded Honors Option for A&P I and II**
Abstract: Are you interested in how to offer an honors option without adding a new course? Front Range Community College offers students the opportunity to earn honors credit while enrolled in any section of A&P. One assessment piece of the project involves a hypothetical case patient presentation related to topics covered in their regular coursework. To encourage critical thinking, students must research two alternate treatment options and provide rationale for one choice. A&P honors credits can be applied toward an Honors Program at FRCC which includes a multidisciplinary Honors Seminar course.

Presenter: Heidi R. Smith, Biology Faculty and Honors Council Chair
Front Range Community College - Larimer Campus
Co Presenter: Molly Fiechtl, Instructor

Session: 109, Room M 3730, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: **Development and Disease**
Abstract: In Anatomy and Physiology courses, time constraints often leave little opportunity for covering details of human embryology and developmental anatomy. As an alternative approach to sharing this information with students, instructors can present developmental processes in the context of curious diseases, disorders, or defects. This workshop will explore a variety of developmental “stories” that relate embryology to aspects of human pathology. Examples will include the embryological basis of detached retina, cleft palate, congenital megacolon, situs inversus, and the intersex condition.

Presenter: Nina Zanetti, Professor of Biology
Siena College
Session: 110, Room M 3090, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: **Scratch Paper - An efficient approach to promoting collaboration in the classroom.**
Abstract: As educators, we recognize the benefits to be gained from collaborative learning. However, these types of activities are often more time consuming than traditional formats. The idea of “scratch paper” can be used in a time efficient manner to foster recall, critical thinking, and group discussion. Students find “scratch paper” to be a supportive, nonthreatening method of informal assessment that aids in their comprehension of class material. This format is easily adaptable to various classroom styles and can even be used effectively in a large lecture format.

Presenter: Stephanie Lab, Professor of Biology  
Joliet Junior College

Session: 111, Room A 1120, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: **Learn how to Use and Integrate iWorx Software and Hardware in your Laboratory**
Abstract: Come learn how easy it is to integrate LabScribe V2.0 data recording software into your Anatomy and Physiology lab. iWorx makes it simple for you to manage your physiology lab and to record and analyze data. Select and organize lab exercises into a manual suited for your courses, use learning materials, illustrations, instructions, and websites that assist students in performing an experiment – all with the click of a button. While recording, students can change display times, pause the data display to take measurements, or work in an on-screen journal as data recording is also displayed. New features make the selection of pertinent data effortless; allow simultaneous measurement from multiple channels; and easily measure parameters, like segments in ECGs, EMGs or lung volumes.

Presenter: Judi D’Alelo, Education and Technical Support Specialist  
iWorx Systems

Session: 112, Room M 3110, Tuesday, 9:30 - 10:30 (60 minutes)  *repeated as 507*
Presentation Title: **A Curricular Module for Clinical Imaging Instruction and Assessment**
Abstract: Two years ago, we shared our methods for teaching clinical imaging using Osirix software and re-purposed Macintosh computers as radiology workstations in the gross lab. We have now developed a three-session module organizing the principal concepts of clinical imaging to complement our system-based cadaver prosection lab instruction. This workshop will share our methods, resources, and experiences developing and assessing this module in our labs. We will share easy ways in which you can adapt clinical imaging to use in your course, regardless of what technology is in your classroom or lab. (Be sure to bring a thumb drive).

Presenter: Jon Jackson, Assistant Professor  
University of North Dakota

Co Presenter: Haris Ali, PhD Student

Session: 113, Room A 1540, Tuesday, 9:30 - 10:30 (60 minutes)
Presentation Title: **Hosting a HAPS Annual Conference 101**
Abstract: Ever wonder... What goes into hosting a HAPS annual conference? How you can get started? Join Annual Conference Committee Chair Izak Paul and past conference coordinators for an informal discussion of these and other questions. Hosting a conference is a lot of work – but worth every bit of it. You’ll discover that the help provided by the HAPS Business Office (e.g., hotel negotiations, conference registration work, collecting revenue and paying the bills, etc.) makes the task of hosting a conference quite straightforward. Sharing the conference profits with HAPS provides professional development funds for your A&P faculty members.

Presenter: Izak Paul, Associate Professor  
Mount Royal University

Co Presenter: J. Ellen Lathrop-Davis, Assistant Professor
Presentation Title: Avian H5N1 and Pandemic H1N1 Update
Abstract: An update on the pandemic H1N1 influenza, trends, vaccines and research will be presented. The H5N1 avian influenza virus remains a threat. The current global situation will be addressed, including spread, mortality, mutations, vaccine research, production and stockpiling, and education efforts and preparation for a potential H5N1 pandemic. Ideas for the use of H1N1 and H5N1 information in teaching the immune system will also be presented.

Presenter: Sandy Lewis, Professor
Pierce College

Presentation Title: Using Mastering A&P to Promote Active Learning
Abstract: This hands-on workshop introduces participants to MasteringA&P, the most effective and widely used online tutorial, homework, and assessment system for the sciences. MasteringA&P tutors students by providing answer-specific feedback, coaching, and hints. By tracking student interaction with the program, the MasteringA&P gradebook provides instructors with diagnostics on student and class performance and demonstrates assessment outcomes. The session will begin with an overview of instructors’ experience teaching with the program and a summary of the research that demonstrates that it enhances the learning process. This will be followed by hands-on practice creating assignments and exploring diagnostics.

Presenter: Terry A. Austin, Chair, Biology Department
Temple College

Presentation Title: Get more out of your existing lab facilities with LabTutor 4
Abstract: LabTutor 4.0 is the latest edition of ADInstruments innovative software for education that enhances teaching and learning. Now with centralized administration of experiments for any number of courses and sections, managing student generated data has never been easier. New LabTutor Online gives students access to pre-lab materials and post lab data analysis via the Internet. Come see how LabTutor 4 can save time and money, and allow you and your students to get the most out of your laboratory technology!

Presenter: Wes Colgan, Education Project Manager
ADInstruments Inc.

Co Presenter: Amy Simpson, Education Sales Engineer

Presentation Title: iWorx Introduces the GA-300 Gas Analyzer for VO2/VCO2/VO2max
Abstract: This workshop will show how easy it is to record and analyze VO2/VCO2/VO2max. Using the iWorx 214, LabScribe2 software and new Gas Analyzer recording and understanding RER, RMR and other metabolic parameters is a simple, straightforward process. The system uses a standard spirometer flow head and mixing chamber to record the subject’s exhaled percentages of CO2 and O2. The software takes over and “does the rest”. This is an advanced workshop for those already using iWorx systems in their labs.

Presenter: Judi D’Aleo, Education and Technical Support Specialist
iWorx Systems

Presentation Title: Science! Camera! Action! Digital Storytelling in the Classroom
Abstract: Movie-making is an engaging educational tool that is easy to implement. Learn how to embed this technology into your curriculum to introduce, instruct, assess, and/or summarize concepts. After modeling the use of movie-making, participants will create their own digital story to take with them. A “How-To” guide will be provided.

Presenter: Jody E. Johnson, M.Ed., M.S., Biology Department Chair
Arapahoe Community College

Co Presenter: Terry Harrison, M.B.S., Instructor
Session: 205, Room M 3690, Tuesday, 10:45 - 12:15 (90 minutes)
Presentation Title: Awesome Analogies, Dynamic Demos, & Mnifty Mnemonics: Skeletal, Muscular & Nervous Systems
Abstract: Looking for ideas to reach students with different learning styles? Analogies and demonstrations are super for making abstract ideas more concrete. And anything that can jog those neurons into better retention is an added bonus. Join us to pick up some new teaching ideas and to share some ideas of your own.

Presenter: Javanika Mody, Professor of Biology
Anne Arundel Community College

Co Presenter: Carol Veil, Professor of Biology

Session: 206, Room M 3720, Tuesday, 10:45 - 12:15 (90 minutes) *repeated as 606*
Presentation Title: Teaching and Learning the Lumbosacral Plexus
Abstract: A tested and powerful technique to teach the anatomy of the lumbosacral plexus. See how this complex network of peripheral nerves can be taught to students in a memorable way that will allow them to use their knowledge as a problem solving tool in clinical settings. This completes the peripheral plexus series for those who have attended the cervical and brachial plexus presentations of the past two years. You will leave this presentation with the ability to draw and label the lumbosacral plexus in its entirety.

Presenter: Mark Nielsen, Professor
University of Utah

Session: 207, Room M 1800, Tuesday, 10:45 - 12:15 (90 minutes) *repeated as 608*
Presentation Title: Are you smarter than a 5th grader: Case Studies in A&P
Abstract: Cases studies in A&P teaching are successful pedagogical tools for reinforcing course content. However, case studies must be used appropriately to stimulate and reinforce learning. They must be relevant to the lecture content and be presented in particular manner that makes the students receptive to learning. This "minds-on" workshop will engage participants in a systems-biology approach to using A&P case studies as an instructional tool for teaching and assessment. Participants will "role-play" students learning a topic covered in A&P coursework.

Presenter: Dr. Brian R. Shmaefsky, Professor of Biology
Lone Star College - Kingwood

Session: 208, Room M 1950, Tuesday, 10:45 - 12:15 (90 minutes) *repeated as 607*
Presentation Title: Using Scoring Rubrics in the Design of Physiology Instruction
Abstract: In this workshop we will briefly review what grading rubrics are, show examples of possible rubric styles, and demonstrate how grading rubrics can be used to provide consistent feedback to students. We will also discuss how the process of constructing grading rubrics can help one design educational exercises for students. As time permits, participants will be assisted in constructing rubrics for use in their specific courses and with their specific student populations.

Presenter: Margaret A. Weck, Director, Division of Basic & Pharmaceutical Sciences and Associate Professor of Biology
St. Louis College of Pharmacy

Session: 209, Room M 3110, Tuesday, 10:45 - 12:15 (90 minutes) *repeated as 609*
Presentation Title: Attention Skeptics--A&P Can Be Taught Online: Online A&P Professors Show You How
Abstract: Are you still skeptical that A&P can be taught online? Dr. Penny Perkins-Johnston of California State University San Marcos and Dr. Laszlo Vass of Community College of Denver present their unique experiences on teaching A&P online and having their students complete lab exercises at home that mirror campus labs. Appreciate details of a video syllabus. Understand using online communication tools and mobile technology. See best practices assuring students are doing their own work. View student videos including dissections. Participate in a lab exercise. Don’t waste time re-inventing the wheel. We will show you all the steps.

Presenter: Penny Perkins-Johnston, Ph.D., Adjunct Professor
California State University, San Marcos

Co Presenter: Laszlo Vass, Ed.D., Professor
Session: 210, Room M 3610, Tuesday, 10:45 - 12:15 (90 minutes)  *repeated as 610*
Presentation Title: **You Say ba-NAN-ah, I Say bah-NAH-na**
Abstract: How do YOU pronounce “mediastinum,” “apoptosis,” or “acetylcholine”—as you were taught orally, or as a dictionary says they “should” be pronounced? Is there a difference? Are you sure you’ve been teaching your students correctly? What defines correct pronunciation, anyway? This interactive workshop will use PowerPoint slides and “clickers” to vote anonymously on the way you think some common anatomical and physiological terms should be pronounced. Differences of opinion revealed by the voting will serve as a springboard for discussion of variations in pronunciation, how we learn pronunciation, oral tradition in A&P, and disparities between common practice and dictionary recommendations.

**Presenter:** Ken Saladin, Professor of Biology  
Georgia College

Session: 301, Room M 3610, Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: **The First Breath: Water to Air Transitions**
Abstract: By contrasting the cardiorespiratory physiology of the human adult, we will review how the human fetus makes acute adaptations to their physiology in order to successfully transition from an aqueous environment to air breathing at birth. Comparisons will be made to the evolutionary water to air transition and how these evolutionary adaptations may be relevant today.

**Presenter:** Dr. Trevor A Day, Assistant Professor  
Mount Royal University

Session: 302, Room A 1100, Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: **Using PAL 2.0 as an Assessment Tool in the Laboratory**
Abstract: Practice Anatomy Lab 2.0 (PAL) is an interactive software package that allows students to have unlimited access to laboratory materials. Students have access to quizzes and lab practicals through each of the 5 modules (cadaver, models, histology, cat, and pig). Instructors have access to additional quizzes and lab practicals that assess student learning. We will discuss different ways these assessment tools can be used in the laboratory.

**Presenter:** Ruth Heisler, Senior Instructor  
University of Colorado-Boulder

**Co Presenter:** Nora Hebert, Faculty

Session: 303, Room M 3110, Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: **Creating Lessons with the Biopac Student Lab System**
Abstract: Learn how to use the power and flexibility of the Biopac Student Lab to customize existing lessons, create your own lessons, or design independent projects. Open to current BSL users and all instructors who want to see the full extent of the Biopac Student Lab’s capabilities. No programming required, just simple pull-down menu selections and easy to set presets and preferences. The BSL PRO software allows you to perform exciting lessons on human and animal subjects. A wide range of BSL PRO lessons is downloadable from our web site—BSL PRO Lessons provide the lesson template file and lesson instructions.

**Presenter:** Tim Cook, Central Sales Representative  
BIOPAC Systems, Inc.

**Co Presenter:** William McMullen

Session: 304, Room M 3070N, Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: **A New Method of Teaching A&P**
Abstract: It is important to bring students back to the classroom. How can this be done without having the students fall asleep in class? I will take a look at some methods that I have found to be positive in the new technological age of teaching. Sometimes going back to basics really does have its benefits! Small group discussions, critical thinking questions, group projects, and also adding a bit of technology has proven to be a winner not only in students attending class, but also participating in class! Isn’t that as instructors, what we are all trying to accomplish?

**Presenter:** Laura Sweet, Full-Time Lecturer  
Eastern Michigan University
Session: 305, Room M 3070S, Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: **EKG's Part 1 - The Basics**
Abstract: This is an introduction in the basic interpretation of EKG's. Understanding rate, rhythm, axis, with “P” “QRS” “T” interpretation, rhythm disturbance such as heart block will be reviewed as well as heart attack patterns on the EKG.

Presenter: Lance Wilson D.O., Professor
Triton College & Dominican University

Session: 306, Room M 3090, Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: **Using Comparative Anatomy to Reinforce Human Anatomy, or an Ulna is an Ulna, is an Ulna**
Abstract: Come and experience a lab that utilizes owl pellets, mammal skulls and bones, human and hominoid skulls, radiographs, skeletal pathology specimens, and other observations to develop a deeper understanding of the characteristics and landmarks of various bones, as well as the concept of form following function as it relates to the skeletal system. Participants will use divergent thinking skills when they compare a horse’s front leg with a bat’s wing and the human hand. The lab acts to review, enrich, and solidify knowledge of skeletal anatomy prior to a skeletal practical exam.

Presenter: Dr. Molly O'Shaughnessy, Associate Professor
Oregon Institute of Technology

Session: 307, Room M 3730, Tuesday, 1:45 - 2:45 (60 minutes) *repeated as 704*
Presentation Title: **From Genes to Proteins to Physiologic Function: Teaching Molecular Biology in an A&P Class**
Abstract: Molecular biology is a diverse field impacting every area of health care. Teaching this subject to undergraduate students prepares them for the forefront of medical practice while providing opportunities to engage in important critical thinking skills. Unfortunately, students often have trouble mentally moving from DNA through RNA to the sequence and ultimate function of a protein. This workshop will begin with a brief review of molecular biology and its techniques. Then we’ll discuss the role of genetics in medical practice and disease. Throughout, we’ll provide concrete assignments that enhance student’s understanding of molecular biology and its importance in physiologic function.

Presenter: Louis Kutcher, Assistant Professor
Univ. of Cincinnati

Session: 308, Room M 3720, Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: **CPR for Writing in Anatomy and Physiology**
Abstract: Have you always wanted to add a writing component to your course but didn’t do it because you felt that your class was too large or the grading would be overwhelming? Then, this session is for you! This workshop will demonstrate a “freeware” known as Calibrated Peer Review (CPR), which allows instructors to create writing assignments with many of the negative aspects of assigning written work eliminated. In addition, one of the most enticing and counterintuitive features of CPR is that the larger the class size, the better this program works.

Presenter: Donna Balding, Ph.D., Assistant Professor of Biology
Macon State College

Co Presenter: Eric Sun, Ph.D., Associate Dean of Arts and Sciences
Session: 309, Room A 1420, Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: International Human Cadaver Prosection Program
Abstract: Human Cadaver Prosection. The annual International Human Cadaver Prosection program at Indiana University, Northwest in Gary, Indiana is an innovative, educational, service learning opportunity. Come learn about this evolving program spearheaded by Earnest F. Talarico Jr., PhD. Western Kentucky University Assistant-Professor, Dana Emberton-Tinius and nursing student, Cecelia Nugent subsequently participated in this 2-day, hands-on anatomy workshop. During this time they helped prepare six anatomical donors for the IU-NW medical school’s upcoming gross anatomy classes. Learn what it’s like to serve on the prosection team as well as how to become a team member yourself.

Presenter: Dana Emberton-Tinius, Assistant Professor, Biology
Western Kentucky University

Co Presenter: Cecelia Nugent, Nursing Student

Session: 310, Room M 3130, Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: Developing and Evaluating Curriculum Materials that Promote Active Learning in Human Anatomy and Physiology
Abstract: Anatomy and physiology education is entrenched with tradition. While other disciplines, most notably physics and chemistry, have aggressively pursued new and innovative learning strategies, we still focus on disseminating large quantities of information using Power Point slides and lecture. This presentation will look at alternative strategies that promote more student-centered learning and begin discussing ideas for a NSF grant that focuses on developing, evaluating, and disseminating novel curriculum materials for anatomy and physiology education.

Presenter: Dr. Murray Jensen, Associate Professor
University of Minnesota

Session: 311, Room M 1950, Tuesday, 1:45 - 2:45 (60 minutes) *repeated as 707*
Presentation Title: Encouraging Students to Read for Career Decisions and Professional Development and Just for Fun (and having some fun yourself while doing it)
Abstract: Many students are unfamiliar with the professional and popular literature of the professions they may soon join. Introducing students to professional organizations, web sites, and literature, as well as popular periodicals and books can help them with career decisions, professional development, and the wonderful joy of a good book. Bring a short list the professional organizations and literature you would suggest your students be familiar with, as well as a list of your favorite books relating to biology, anatomy, and physiology. We’ll discuss them and ways to introduce students to them.

Presenter: Paul A. Gardner, Professor of Biology
Snow College

Session: 312, Room A 1120, Tuesday, 1:45 - 2:45 (60 minutes) *repeated as 508*
Presentation Title: Web Enhanced Anatomy and Physiology Courses
Abstract: Today’s students are nontraditional by nature; therefore, traditional teaching styles are not as effective. Integration of technology in our teaching methods is essential. At Johnston Community College, student’s performance improved in web enhanced anatomy and physiology courses. This presentation covers the tools we use to enhance our courses. It includes statistics comparing classes with normal laboratory exercises to other traditional courses with reduced animal dissections in combination with virtual resources. In addition, successful student retention and dropout prevention methods will be addressed. Lecture resources will be presented. Utilizing McGraw Hill resources among others lowered dropout rate and improved student performance.

Presenter: Nahel Awadallah, Biology Instructor / Advisor
Johnston Community College
Session: 313, Room M 1800 Tuesday, 1:45 - 2:45 (60 minutes)
Presentation Title: Best Practices (?) for a One Semester A&P Course
Abstract: Are you one of the “chosen few” who teach a one semester A&P course? Do you struggle to: (a) Find the perfect textbook/lab manual? (b) Create the appropriate combination of anatomy/physiology labs? (c) Decide which topics to cover and which to leave out? (d) Create the perfect level of rigor for your particular students? (e) All of the above? Would you like to hear what others are doing in their one semester A&P classes? If so, this workshop is for you. Please bring a copy of a typical lecture/lab schedule, and come prepared to discuss your course with others who share the same challenges.
Presenter: Anne Geller, Professor, Department of Biology
San Diego Mesa College

Session: 401, Room M 3610, Tuesday, 3:00 - 4:00 (60 minutes) *repeated as 502*
Presentation Title: The Peritoneum, a Serous Membrane Used in the Treatment of Renal Failure
Abstract: The peritoneum consists of a layer of mesothelium which rests on a continuous basement membrane overlying several strata of connective tissue fibers containing various cells and blood vessels. This tissue covers the internal abdominal walls and viscera as serosal tissue and comprises the mesentery and omentum. Dialysis centers are using continuous ambulatory peritoneal dialysis (CAPD) for the treatment of renal failure. A sterile dialysate solution is infused into the peritoneal cavity which allows the peritoneum to dialyze uremic toxins from the blood. In this presentation, the anatomy and physiology of the peritoneum and the effects of CAPD will be discussed.
Presenter: Dr. Johnny K. Lloyd, Associate Professor of Biology
Aurora University

Session: 402, Room A 1100, Tuesday, 3:00 - 4:00 (60 minutes)
Presentation Title: How to Develop Interactive, Online Formative Exams that Promote Application of Anatomical and Physiological Knowledge within Clinical Contexts
Abstract: This workshop will explore the use of QuandaryR (http://www.halfbakedsoftware.com/quandary.php) to construct self-testing exercises within the context of clinical scenarios. Linked questions will evaluate the anatomical and physiological bases for each case while providing instructional feedback for both correct and incorrect responses. Clinical decision making questions (CDMQs; more than one choice allowed per question and scoring reflects response value) will also be investigated. Workshop attendees will develop their own MCQs and CDMQs that will then be inserted into Quandary as a group exercise. Final steps will explore more specialized aspects including negative scoring, use of a timer, and incorporation of figures.
Presenter: Jackie Carnegie, PhD, M.Ed., Associate Professor
University of Ottawa

Session: 403, Room 3110, Tuesday, 3:00 - 4:00 (60 minutes) *repeated as 701*
Presentation Title: Introducing the New BIOPAC MP45- A Budget Beating Physiology Lab Solution for Community Colleges
Abstract: The New handheld MP45 is the latest addition to the Biopac Student Lab family. The powerful two-channel system works with BIOPAC’s extensive curriculum library and broad range of transducers. The MP45 connects to the computer via USB to receive power and transmit data. Like all BSL products, the system is intuitive and extremely robust. There are no knobs, dials, or switches to confuse students, just a USB cord and two ports to connect transducers and electrodes. Connect the USB, launch a BSL Lesson, and start recording data. Attend the workshop and be amazed by the power, flexibility and budget-beating price.
Presenter: Tim Cook, Central Sales Representative
BIOPAC Systems, Inc.
Co Presenter: William McMullen
Session: 404, Room M 3730, Tuesday, 3:00 - 4:00 (60 minutes)  *repeated as 702*
Presentation Title: I'M IMMUNE TO YOU
Abstract: This workshop will highlight the use of a board game that has been developed to help students understand how the immune system works. It is a fun way for students to catch diseases and see how the immune system responds and matures over time. A brief introduction to the game along with student comments and feedback will be given. Workshop attendees will then have the ability to interact with the game and each other, finding out who really has the best immune system.

Presenter: Julie Fickas, Instructor
St Louis Community College

Co Presenter: Teri Hacker, Project Associate

Session: 405, Room M 3070S, Tuesday, 3:00 - 4:00 (60 minutes)
Presentation Title: EKG's Part 2 - Advanced Interpretations
Abstract: This is a second course to complement basic EKG's reading. Part two goes in to more advance EKG’s and a better understanding of supraventricular tachycardias, ventricular arrhythmia's and how the pacemaker effect the EKG’s.

Presenter: Lance Wilson D.O., Professor
Triton College & Dominican University

Session: 406, Room M 3090, Tuesday, 3:00 - 4:00 (60 minutes)  *repeated as 703*
Presentation Title: Dry Erase Mats & Round Robins: Engaging Them during Lab Reviews
Abstract: How do you get students to review material during lab sessions and know that they’re getting it or just nodding along? I have several sessions throughout the semester where the students get a semi-structured setting of group review and practice writing out terms and listing/drawing structures. Come experience what they go through as they prepare for a lab practical exam.

Presenter: Tom Lehman, Anatomy & Physiology instructor
Coconino Community College

Session: 407, Room M 3720, Tuesday, 3:00 - 4:00 (60 minutes)  *repeated as 705*
Presentation Title: Using Problem-based Learning to teach concepts of physiology
Abstract: Problem-based learning (PBL) is a highly effective teaching strategy that employs real-world problems used to guide students to identify and learn about the specific concepts necessary to solve questions about the problem. In this workshop, participants will learn about the basic components of the problem-based learning approach and how it facilitates high levels of comprehension. We will go over the specific steps involved in using problem-based learning in the classroom, and attendees will participate in a mock PBL session using problems that are utilized to cover concepts of cell physiology in an Advanced Physiology course.

Presenter: Margaret Nordlie, Professor of Biology and Chair, Math/Science Division
University of Mary

Session: 408, Room A 1420, Tuesday, 3:00 - 4:00 (60 minutes)
Presentation Title: Unifying Concepts in Human Anatomy: Tubes and Tissues
Abstract: Many students approach human anatomy as a “memorization” course and focus on the many details and minutiae that they see as the course content. My approach to the teaching and learning of human anatomy is through broad concepts with the use of details to support these concepts. I will discuss two specific conceptual frameworks, embryology and histology, that I thread throughout my human anatomy course to reinforce (1) how the basic body plan organizes adult anatomic structure and (2) the relationship between structure and function as applied to body tissues.

Presenter: Patricia Brady Wilhelm, Professor of Biology
Community College of Rhode Island
Session: 409, Room M 1950, Tuesday, 3:00 - 4:00 (60 minutes)
Presentation Title: Assessment of Student Learning: Successful National Accreditation by the Higher Learning Commission in 2009
Abstract: This workshop will review successful measures of student learning in Anatomy and Physiology. The assessment tools presented will illustrate both internal and external measures utilized by Mercy College. These measures were complimented by the Higher Learning Commission visitation team in our recent 2009 site visit, which resulted in a recommendation for 10 years of accreditation. External measure of student learning is associated with National testing and analysis of data by student, class grade, organ system and instructor. Internal measures consist of a variety of techniques including both objective and subjective measures. Techniques presented could easily be adapted to other institutions.
Presenter: Dr. Barbara Stoos, Associate Dean of Sciences/ Professor of Physiology
Mercy College of Northwest Ohio

Session: 410, Room M 3130, Tuesday, 3:00 - 4:00 (60 minutes) *repeated as 706*
Presentation Title: Overcoming the challenges of teaching anatomy WITH LAB fully online
Abstract: Do you currently teach or have you thought about teaching anatomy online? We'd like to show you our course designs and continue discussions within HAPS about challenges and potential solutions to online anatomy, focusing on the lab component. Both of our courses use lab manuals specifically designed for online sections. See how our labs are organized and the various exercises and assessment students are required to complete. While realizing that online is not for everyone, we think it is a viable option. We'll share our student success data comparing online vs face-to-face sections. Come bring your ideas, questions, and concerns.
Presenter: Cynthia A. Herbrandson, Human Anatomy & Botany Instructor
Kellogg Community College
Co Presenter: Betsy Brantley, Science Professor

Session: 411, Room A 1540, Tuesday, 3:00 - 4:00 (60 minutes)
Presentation Title: Advising for Medical School: Myths and Facts
Abstract: Medical school ranks as one of the most popular career goals among incoming first-year students in the Life Sciences. As such, this presentation will focus on how faculty and advisors can help their students prepare and succeed when applying to medical school. The information provided will help faculty and advisors become familiar with current medical school statistics, the characteristics of a competitive applicant, and to distinguish between medical school myths and facts. Furthermore, we will look at traditional and non-traditional ways of applying, as well as the important role that faculty and advisors play in this process. The presentation will be followed by a question and answer session.
Presenter: Barbara DeHart, M.S.
Penn State University

Session: 412, Room M 1800, Tuesday, 3:00 - 4:00 (60 minutes)
Presentation Title: A Brief History of Anatomy
Abstract: Everyone knows that the way things are now is a function of the way things were in the past. For this reason, in order to understand why things are the way they are now, we must have some understanding of history. This is certainly true in Anatomy and Physiology. If this weren’t enough of a reason for the development of some level of historical awareness, there is the added benefit of the fact that it is just plain fun. This brief treatment of the history of anatomy will attempt to support these concepts.
Presenter: John Cornell, Associate Professor
Saint Cloud State University
Session: 413, Room M 3690, Tuesday, 3:00 - 4:00 (60 minutes) *repeated as 708*
Presentation Title: Hybrid Labs for Distance Learning: Lessons Learned
Abstract: Lessons learned re: teaching hybrid labs for anatomy/physiology I and anatomy and physiology II courses will be presented. Discussion will be open to the group so that we can all learn from each other. The goals of the workshop are to show that hybrid labs can be effective, to reveal benefits/pitfalls of the process and to share ideas. The workshop should prove beneficial to those at all levels of teaching distance learning A&P.

Presenter: Janice Yoder Smith, Professor, Biology
Tarrant County College Northwest Campus

Wednesday, June 2
HAPS Institute Workshops: (open to registered HAPS-I course participants only)
Session 903: Room M 4140, Wednesday 9:15-2:30, Advanced Cardiovascular Physiology
Session 904: Room M 4760, Wednesday 9:15-2:30, Concepts in Human Embryology

Session: 501, Room M 3720, Wednesday, 9:15 - 10:15 (60 minutes)
Presentation Title: Understanding Baccalaureate Nursing Students’ Perceptions of Anatomy and Physiology
Abstract: Learning and retaining anatomy and physiology of the human body is critical for student nurses’ success in future theory and clinical courses and eventual safe practice as a registered professional nurse. However, educators are faced with student nurses’ perceptions that anatomy and physiology content can be taught during their nursing classes and students who do not see the relevance or value of taking a separate anatomy and physiology course. The purpose of this presentation is explore the issues surrounding this perception and discuss strategies to assist students with their learning of anatomy and physiology.

Presenter: Janet Levey, MSN, RN-BC, CNE, Assistant Professor
Alverno College

Session: 502, Room M 3610, Wednesday, 9:15 - 10:15 (60 minutes)
Presentation Title: The Peritoneum, a Serous Membrane Used in the Treatment of Renal Failure
Abstract: The peritoneum consists of a layer of mesothelium which rests on a continuous basement membrane overlying several strata of connective tissue fibers containing various cells and blood vessels. This tissue covers the internal abdominal walls and viscera as serosal tissue and comprises the mesentery and omentum. Dialysis centers are using continuous ambulatory peritoneal dialysis (CAPD) for the treatment of renal failure. A sterile dialysate solution is infused into the peritoneal cavity which allows the peritoneum to dialyze uremic toxins from the blood. In this presentation, the anatomy and physiology of the peritoneum and the effects of CAPD will be discussed.

Presenter: Dr. Johnny K. Lloyd, Associate Professor of Biology
Aurora University

Session: 503, Room A 1100, Wednesday, 9:15 - 10:15 (60 minutes)
Presentation Title: Online Anatomy & Physiology
Abstract: With growing enrollment and declining budgets, lab space is always at a premium. Can an online anatomy & physiology course provide a suitable alternative? Come see what you think of a new 2-semester combined anatomy & physiology course that utilizes the most complete, detailed and accurate 3D model of human anatomy.

Presenter: Betsy Brantley, Science Professor
Lansing Community College
**Session: 504, Room A 1420, Wednesday, 9:15 - 10:15 (60 minutes)**

**Presentation Title:** Do Your Students Understand the Anatomy of the Autonomic Nervous System?

**Abstract:** We will present an approach using inexpensive materials that can be adapted to the qualifications of your students. For this hands-on session, presenters will provide materials and reference figures from commonly used human anatomy and physiology textbooks for a simple example of this approach.

**Presenter:** Margaret McMichael, Associate Professor of Biology  
Baton Rouge Community College

**Co Presenter:** Andrea Scollard, Instructor of Biology

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**Session: 506, Room M 3070N, Wednesday, 9:15 - 10:15 (60 minutes)**

**Presentation Title:** Creating Lessons with the Biopac Student Lab System

**Abstract:** Learn how to use the power and flexibility of the Biopac Student Lab to customize existing lessons, create your own lessons, or design independent projects. Open to current BSL users and all instructors who want to see the full extent of the Biopac Student Lab's capabilities. No programming required, just simple pull-down menu selections and easy to set presets and preferences. The BSL PRO software allows you to perform exciting lessons on human and animal subjects. A wide range of BSL PRO lessons is downloadable from our web site—BSL PRO Lessons provide the lesson template file and lesson instructions.

**Presenter:** Tim Cook, Central Sales Representative  
BIOPAC Systems, Inc.

**Co Presenter:** William McMullen

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**Session: 507, Room M 1950, Wednesday, 9:15 - 10:15 (60 minutes)**

**Presentation Title:** A Curricular Module for Clinical Imaging Instruction and Assessment

**Abstract:** Two years ago, we shared our methods for teaching clinical imaging using Osirix software and re-purposed Macintosh computers as radiology workstations in the gross lab. We have now developed a three-session module organizing the principal concepts of clinical imaging to complement our system-based cadaver prosection lab instruction. This workshop will share our methods, resources, and experiences developing and assessing this module in our labs. We will share easy ways in which you can adapt clinical imaging to use in your course, regardless of what technology is in your classroom or lab. (Be sure to bring a thumb drive).

**Presenter:** Jon Jackson, Assistant Professor  
University of North Dakota

**Co Presenter:** Haris Ali, PhD Student

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**Session: 508, Room A 1120, Wednesday, 9:15 - 10:15 (60 minutes)**

**Presentation Title:** Web Enhanced Anatomy and Physiology Courses

**Abstract:** Today’s students are nontraditional by nature; therefore, traditional teaching styles are not as effective. Integration of technology in our teaching methods is essential. At Johnston Community College, student’s performance improved in web enhanced anatomy and physiology courses. This presentation covers the tools we use to enhance our courses. It includes statistics comparing classes with normal laboratory exercises to other traditional courses with reduced animal dissections in combination with virtual resources. In addition, successful student retention and dropout prevention methods will be addressed. Lecture resources will be presented. Utilizing McGraw Hill resources among others lowered dropout rate and improved student performance.

**Presenter:** Nahel Awadallah, Biology Instructor / Advisor  
Johnston Community College
**Session: 509, Room M 3070S, Wednesday, 9:15 - 10:15 (60 minutes)**

**Presentation Title:** Basic Heart Sounds  
**Abstract:** This program presented by a cardiologist gives a unique approach to understand normal and abnormal heart sounds. By using both site, sound and the cardiac cycle to incorporate these sounds into long term memory.

**Presenter:** Lance Wilson D.O., Professor  
Triton College & Dominican University

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**Session: 510, Room M 3130, Wednesday, 9:15 - 10:15 (60 minutes)**

**Presentation Title:** Student personal response systems in large anatomy and physiology classrooms  
**Abstract:** A challenge of teaching anatomy and physiology in large classrooms is successfully engaging students to participate in active learning. Student personal response systems are technological instructional tools that promote interactive learning while also allowing instructors to survey the effectiveness of communicated lecture material. Students are posed with questions and utilize “clickers”, similar to remote controls, to answer these questions. Answers can be accompanied by small group student discussions, thereby increasing participation to promote active understanding of material. Clickers also provide students with immediate feedback or success or failure, helping to focus studying habits. In this workshop, the setup of a personal response system will be discussed. Different styles of questions, such as content versus process questions, will be examined as well as feedback and data from a large physiology class (about 500 students), which utilized a personal response system.

**Presenter:** Jennelle Malcos, Ph.D.  
Penn State University

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**Session: 601, Room A 1100, Wednesday, 10:30 - 12:00 (90 minutes)**

**Presentation Title:** Customize any LabTutor experiment or create your own with LabAuthor 4.0  
**Abstract:** LabAuthor 4.0 is the latest edition of ADInstruments software for creating and editing LabTutor experiments. LabAuthor incorporates a very intuitive, drag-and-drop user interface for editing the HTML elements of a LabTutor experiment. Virtually any media (.mpg, .wmv, .mp3, .avi, etc.) can be incorporated into your labs with LabTutor. Setup of the data acquisition and PowerLab control elements is quick and easy. Combined with LabTutor 4 with its centralized experiment administration, and LabTutor Online giving access to pre-lab materials and post-lab data analysis via the Internet; the options to enhance your students lab experience are limitless!

**Presenter:** Wes Colgan, Education Project Manager  
ADInstruments Inc.

**Co Presenter:** Amy Simpson, Education Sales Engineer

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**Session: 602, Room A 1120, Wednesday, 10:30 - 12:00 (90 minutes)**

**Presentation Title:** Keeping Your Head Above Water - Solutions for the Overtaxed A&P Instructor  
**Abstract:** The explosion in enrollment of A&P courses, and their migration to the online, hybrid, & web-enhanced-traditional formats, has taxed the ability of most instructors to develop interactive resources that not only challenge the next generation of students, but also assess their performance and provide tutorial assistance for those students who require it. This hands-on workshop will explore a potential solution to these problems that will not only serve to engage students, but also meet the needs of instructors in online, hybrid, and traditional classrooms.

**Presenter:** Stephen Sullivan, Assistant Professor  
Bucks County Community College

**Co Presenter:** William Hoover, Assistant Professor
Session: 603, Room A 1140, Wednesday, 10:30 - 12:00 (90 minutes)

Presentation Title: Using web-HUMAN To Store Experiments and Assignments For Your Students

Abstract: The web-HUMAN internet site (placid.skidmore.edu) contains 2 portions, the model itself and an experiment storage data base. The widely-used model interactively allows teachers/students to experiment with the integrated physiology/pathophysiology of 400 variables of 8 fully and 4 partially represented systems. The newly expanded data base is much less used. The workshop reviews basic use of the model and then goes on to teach users how to employ the data base to pre-store experiments for your students to run (including instructions & questions), store lecture demonstrations and have students store assignments (experiments and analyses) for your later printout and review.

Presenter: Roy S. Meyers, Professor of Biology
Skidmore College, Biology

Co Presenter: Leo Geoffrion, Senior Systems Administrator / Skidmore retiree

Session: 604, Room M 3090, Wednesday, 10:30 - 12:00 (90 minutes)

Presentation Title: Serial Killer Identified!  Analysis of the Stomach Contents of a Homicide Victim

Abstract: In this wet lab you will work with a simulation of a stomach contents analysis in an attempt to identify the restaurant where a murder victim had her last meal. The simulation techniques was developed by Dr David Norris (CU Boulder) and Dr. Jane Boch (CU Boulder retired). Dr. Norris, Dr. Boch and Vickey Trammell (presenter) are members of NecroSearch, a volunteer organization that works with law enforcement on cold cases. This lab can be used during units on digestive system, enzymes and microscope and cells.

Presenter: Vickey Trammell, Biology Instructor and Department Chairman, retired
Arapahoe Community College

Session: 605, Room A 1540, Wednesday, 10:30 - 12:00 (90 minutes)

Presentation Title: Using Mastering A&P to Promote Active Learning

Abstract: This hands-on workshop introduces participants to MasteringA&P, the most effective and widely used online tutorial, homework, and assessment system for the sciences. MasteringA&P tutors students by providing answer-specific feedback, coaching, and hints. By tracking student interaction with the program, the MasteringA&P gradebook provides instructors with diagnostics on student and class performance and demonstrates assessment outcomes. The session will begin with an overview of instructors’ experience teaching with the program and a summary of the research that demonstrates that it enhances the learning process. This will be followed by hands-on practice creating assignments and exploring diagnostics.

Presenter: Terry A. Austin, Chair, Biology Department
Temple College

Session: 606, Room M 3720, Wednesday, 10:30 - 12:00 (90 minutes)

Presentation Title: Teaching and Learning the Lumbosacral Plexus

Abstract: A tested and powerful technique to teach the anatomy of the lumbosacral plexus. See how this complex network of peripheral nerves can be taught to students in a memorable way that will allow them to use their knowledge as a problem solving tool in clinical settings. This completes the peripheral plexus series for those who have attended the cervical and brachial plexus presentations of the past two years. You will leave this presentation with the ability to draw and label the lumbosacral plexus in its entirety.

Presenter: Mark Nielsen, Professor
University of Utah

Session: 607, Room M 1950, Wednesday, 10:30 - 12:00 (90 minutes)

Presentation Title: Using Scoring Rubrics in the Design of Physiology Instruction

Abstract: In this workshop we will briefly review what grading rubrics are, show examples of possible rubric styles, and demonstrate how grading rubrics can be used to provide consistent feedback to students. We will also discuss how the process of constructing grading rubrics can help one design educational exercises for students. As time permits, participants will be assisted in constructing rubrics for use in their specific courses and with their specific student populations.

Presenter: Margaret A. Weck, Director, Division of Basic & Pharmaceutical Sciences and Associate Professor of Biology
St. Louis College of Pharmacy
Session: 608, Room M 1800, Wednesday, 10:30 - 12:00 (90 minutes)
Presentation Title: Are you smarter than a 5th grader: Case Studies in A&P
Abstract: Cases studies in A&P teaching are successful pedagogical tools for reinforcing course content. However, case studies must be used appropriately to stimulate and reinforce learning. They must be relevant to the lecture content and be presented in particular manner that makes the students receptive to learning. This “minds-on” workshop will engage participants in a systems-biology approach to using A&P case studies as an instructional tool for teaching and assessment. Participants will “role-play” students learning a topic covered in A&P coursework.

Presenter: Dr. Brian R. Shmaefsky, Professor of Biology
          Lone Star College - Kingwood

Session: 609, Room M 3110, Wednesday, 10:30 - 12:00 (90 minutes)
Presentation Title: Attention Skeptics--A&P Can Be Taught Online: Online A&P Professors Show You How
Abstract: Are you still skeptical that A&P can be taught online? Dr. Penny Perkins-Johnston of California State University San Marcos and Dr. Laszlo Vass of Community College of Denver present their unique experiences on teaching A&P online and having their students complete lab exercises at home that mirror campus labs. Appreciate details of a video syllabus. Understand using online communication tools and mobile technology. See best practices assuring students are doing their own work. View student videos including dissections. Participate in a lab exercise. Don’t waste time re-inventing the wheel. We will show you all the steps.

Presenter: Penny Perkins-Johnston, Ph.D., Adjunct Professor
          California State University, San Marcos

Co Presenter: Laszlo Vass, Ed.D., Professor

Session: 610, Room M 3610, Wednesday, 10:30 - 12:00 (90 minutes)
Presentation Title: You Say ba-NAN-ah, I Say bah-NAH-na
Abstract: How do YOU pronounce “mediastinum,” “apoptosis,” or “acetylcholine”—as you were taught orally, or as a dictionary says they “should” be pronounced? Is there a difference? Are you sure you’ve been teaching your students correctly? What defines correct pronunciation, anyway? This interactive workshop will use PowerPoint slides and “clickers” to vote anonymously on the way you think some common anatomical and physiological terms should be pronounced. Differences of opinion revealed by the voting will serve as a springboard for discussion of variations in pronunciation, how we learn pronunciation, oral tradition in A&P, and disparities between common practice and dictionary recommendations.

Presenter: Ken Saladin, Professor of Biology
          Georgia College

Session: 701, Room M 3070N, Wednesday, 1:30 - 2:30 (60 minutes)
Presentation Title: Introducing the New BIOPAC MP45- A Budget Beating Physiology Lab Solution for Community Colleges
Abstract: The New handheld MP45 is the latest addition to the Biopac Student Lab family. The powerful two-channel system works with BIOPAC’s extensive curriculum library and broad range of transducers. The MP45 connects to the computer via USB to receive power and transmit data. Like all BSL products, the system is intuitive and extremely robust. There are no knobs, dials, or switches to confuse students, just a USB cord and two ports to connect transducers and electrodes. Connect the USB, launch a BSL Lesson, and start recording data. Attend the workshop and be amazed by the power, flexibility and budget-beating price.

Presenter: Tim Cook, Central Sales Representative
          BIOPAC Systems, Inc.

Co Presenter: William McMullen
Session: 702, Room M 3730, Wednesday, 1:30 - 2:30 (60 minutes)
Presentation Title: I'M IMMUNE TO YOU
Abstract: This workshop will highlight the use of a board game that has been developed to help students understand how the immune system works. It is a fun way for students to catch diseases and see how the immune system responds and matures over time. A brief introduction to the game along with student comments and feedback will be given. Workshop attendees will then have the ability to interact with the game and each other, finding out who really has the best immune system.

Presenter: Julie Fickas, Instructor  
St Louis Community College

Co Presenter: Teri Hacker, Project Associate

Session: 703, Room M 3090, Wednesday, 1:30 - 2:30 (60 minutes)
Presentation Title: Dry Erase Mats & Round Robins: Engaging Them during Lab Reviews
Abstract: How do you get students to review material during lab sessions and know that they're getting it or just nodding along? I have several sessions throughout the semester where the students get a semi-structured setting of group review and practice writing out terms and listing/drawing structures. Come experience what they go through as they prepare for a lab practical exam.

Presenter: Tom Lehman, Anatomy & Physiology instructor  
Coconino Community College

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Presentation Title: From Genes to Proteins to Physiologic Function: Teaching Molecular Biology in an A&P Class
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Presenter: Louis Kutcher, Assistant Professor  
University of Cincinnati

Session: 705, Room M 3720, Wednesday, 1:30 - 2:30 (60 minutes)
Presentation Title: Using Problem-based Learning to teach concepts of physiology
Abstract: Problem-based learning (PBL) is a highly effective teaching strategy that employs real-world problems used to guide students to identify and learn about the specific concepts necessary to solve questions about the problem. In this workshop, participants will learn about the basic components of the problem-based learning approach and how it facilitates high levels of comprehension. We will go over the specific steps involved in using problem-based learning in the classroom, and attendees will participate in a mock PBL session using problems that are utilized to cover concepts of cell physiology in an Advanced Physiology course.

Presenter: Margaret Nordlie, Professor of Biology and Chair, Math/Science Division  
University of Mary
Session: 706, Room M 3130, Wednesday, 1:30 - 2:30 (60 minutes)
Presentation Title: Overcoming the challenges of teaching anatomy WITH LAB fully online
Abstract: Do you currently teach or have you thought about teaching anatomy online? We'd like to show you our course designs and continue discussions within HAPS about challenges and potential solutions to online anatomy, focusing on the lab component. Both of our courses use lab manuals specifically designed for online sections. See how our labs are organized and the various exercises and assessment students are required to complete. While realizing that online is not for everyone, we think it is a viable option. We'll share our student success data comparing online vs face-to-face sections. Come bring your ideas, questions, and concerns.

Presenter: Cynthia A. Herbrandson, Human Anatomy & Botany Instructor
Kellogg Community College

Co Presenter: Betsy Brantley, Science Professor

Session: 707, Room M 1950, Wednesday, 1:30 - 2:30 (60 minutes)
Presentation Title: Encouraging Students to Read for Career Decisions and Professional Development and Just for Fun (and having some fun yourself while doing it)
Abstract: Many students are unfamiliar with the professional and popular literature of the professions they may soon join. Introducing students to professional organizations, web sites, and literature, as well as popular periodicals and books can help them with career decisions, professional development, and the wonderful joy of a good book. Bring a short list the professional organizations and literature you would suggest your students be familiar with, as well as a list of your favorite books relating to biology, anatomy, and physiology. We'll discuss them and ways to introduce students to them.

Presenter: Paul A. Gardner, Professor of Biology
Snow College

Session: 708, Room M 3690, Wednesday, 1:30 - 2:30 (60 minutes)
Presentation Title: Hybrid Labs for Distance Learning: Lessons Learned
Abstract: Lessons learned re: teaching hybrid labs for anatomy/physiology I and anatomy and physiology II courses will be presented. Discussion will be open to the group so that we can all learn from each other. The goals of the workshop are to show that hybrid labs can be effective, to reveal benefits/pitfalls of the process and to share ideas. The workshop should prove beneficial to those at all levels of teaching distance learning A&P.

Presenter: Janice Yoder Smith, Professor, Biology
Tarrant County College Northwest Campus

Session: 709, Room M 3070S, Wednesday, 1:30 - 2:30 (60 minutes)
Presentation Title: Acid-Base Made Easy
Abstract: From a critical care specialist point of view, Dr. Wilson presents a review in the interpretation of arterial blood gases, going over respiratory & metabolic acidosis and alkalosis. After understanding the nomenclature, the pathophysiology for each disorder will be reviewed.

Presenter: Lance Wilson D.O., Professor
Triton College & Dominican University
Downtown Littleton Light Rail Station – GO LEFT and walk to Campus
From Main Building ➔

Go Downstairs ➔

From 2nd Floor ➔

Wheelchair accessible from first floor via elevators from main building only
Denver Pavilions - Walk out of the main entrance to the Hyatt Regency and head one block north to the Denver Pavilions, an open-air retail and entertainment center. There you will find dining options such as the Hard Rock Café, Maggiano's Little Italy, and Corner Bakery & Café. Entertainment at the Denver Pavilions include: Lucky Strike Lanes for bowling, Jazz @ Jacks for live music and Coyote Ugly Saloon for, well, dancing on the bar! Shopping at the Denver Pavilions includes Barnes and Noble, Banana Republic, Gap, Niketown, and Talbots. http://www.denverpavilions.com/index.php

16th Street Mall - Outside the Denver Pavilions, the pedestrian-friendly 16th Street Mall offers many places to eat and shop, as well as street performers and prime people-watching. The MallRide is a free electric shuttle that can take you along the 16-block stretch to enjoy some of Downtown Denver's finest restaurants and shops. Popular dining & drinking options abound including the Paramount Café, Rock Bottom Restaurant & Brewery, Cheesecake Factory, and Rialto Café.

The Denver Center for the Performing Arts Complex – Ballet, Opera, Symphony, and Broadway theater occupy this 4-block, 12-acre site west of the Hyatt. Nearby, you can find The Corner Office Restaurant & Martini Bar, The Oceanaire Seafood Room, and Baur’s Ristorante. http://www.denvercenter.org/Home.aspx

LoDo - Take the free MallRide from the 16th street mall to Historic Lower Downtown. The Tattered Cover Bookstore provides a reader’s paradise and the multitude of nightclubs, bars and breweries offer many options for fun in LoDo. The Colorado Rockies play at Coors Field located at 20th & Blake. http://colorado.rockies.mlb.com/col/ballpark/index.jsp Across from historic Union Station you can visit the popular Wynkoop Brewing Company, Denver’s first brewpub, founded in 1988.

Larimer Square – The corner of 15th and Larimer introduces you to Larimer Square, a mecca of small boutiques and hip eateries. Here you will also find Comedy Works, Denver’s premier destination for the very best in stand-up comedy and national talent. http://www.larimersquare.com/

More Downtown Denver sights – Looking west from the glittering gold dome of the state Capitol, you can see Denver’s City and County building set against a backdrop of the majestic Rocky Mountains. The Denver Mint, the Colorado History Museum and the Denver Art Museum are all centrally located near the Capitol building.

Denver Museum of Nature and Science & City Park – Just over 3 miles east of the Hyatt is Denver’s 330-acre City Park, which is home to the Denver Museum of Nature and Science, the Denver Zoo, and the landmark boat pavilion. The DMNS is open daily 9-5 and will be hosting the BodyWorlds & The Story of the Heart exhibit until July 2010. Tickets can be purchased online at http://exhibitions.dmns.org/

Wireless Internet: The Hyatt Regency does not have free wireless anywhere in the hotel. Internet access at the Hyatt is provided by T-Mobile HotSpot. However, FREE wireless internet can be found anywhere along 16th street Mall, the Corner Bakery and Café and Barnes and Noble at the Denver Pavilions. Arapahoe Community College also provides free wireless internet.
Welcome to Estes Park, one of the world’s favorite natural playgrounds! Your first stop will be the enchanting Stanley Hotel, which served as inspiration for the famous movie “The Shining.” Since 1909, many distinct people from the world over have enjoyed the magnificence of this flourishing mountain valley and the quiet luxury of this exquisite hotel. After some time to explore and buy a souvenir, you will depart for one of our nation’s greatest natural assets -- Rocky Mountain National Park. This natural wonder offers vistas of the breathtaking beauty of the alpine terrain that comprises a full one-third of the park’s 415 square miles. Enjoy a stop at the Beaver Meadows Visitor’s Center for Colorado gifts, a short film about the park, and some wonderful photo opportunities. After working up an appetite, you will head to downtown Estes Park where you’ll have time to enjoy a stroll through the streets of this quaint mountain village. Stop on your own for lunch, ice cream, or visit the delicious candy stores as you discover unique shops and the trickling creek that runs alongside the streets. At this point on today’s adventure, guests who want a Colorado horseback riding experience will head to Sombrero Stables and everyone else will either remain in town for more fun and shopping, or can spend this extra time hiking in Rocky Mountain National Park. Once these afternoon activities have concluded, your drive back to Denver along the Peak-to-Peak Highway, a National Scenic Byway, will offer a plethora of picture-perfect vistas!

Itinerary

7:30 a.m.  Depart the Hyatt Regency
9:00 a.m.  Arrive Stanley Hotel for free time to explore the grounds and visit the gift shop
9:45 a.m.  Re-board motorcoach and depart for Rocky Mountain National Park
10:00 a.m.  Arrive Rocky Mountain National Park and Beaver Meadow Visitor’s Center
           Gift Shop, 20-minute film on park, a topographical map, and a ranger onsite
11:00 a.m.  Re-board motorcoach and head into Estes Park
11:15 a.m.  Free time and lunch on own in Estes Park
12:45 p.m.  Horseback riding group departs for Sombrero Stables
Remaining guests have option of staying in Estes Park or returning to Rocky Mountain National Park for free time and hiking
2:45 p.m.   Hikers and guests in town board motorcoaches and depart for Sombrero Stables
where the rest of the guests will be picked up
3:15 p.m.   Motorcoaches depart for Denver
4:30 p.m.   Return to Hyatt Regency
"It is high time a good book was available to not only teach biologists some physics, particularly bioenergetics, but make them sit up and think a bit more deeply about it. This little volume is more readable than other drier and much weightier books on the subject. Herein lies perhaps the merit of Mae-Wan Ho’s book."

How New Humans Are Made
Cells and Embryos, Twins and Chimeras, Left and Right, Mind/Self/Soul, Sex, and Schizophrenia

Human developmental biology is a foundational discipline within the humanities. Old and new unanswered questions are waiting to be dug out from under old unquestioned answers about how becoming human unfolds. This book will also address some popular and weighty assertions about the circumstances and mechanisms of our beginnings and our ceaseless becoming.

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