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Serratus Anterior
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Intercostals
Linea Alba
Transversus Abdominis
Rectus Abdominis

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Greetings From Your President .......................... Philip Tate

HAPS 2005—St. Louis, MO .................................. 5
Margaret Weck

HAPS 2004—Calgary, Alberta, Canada ...................... 6
Katja Hoekstra, M.D., Ph.D.

EDU-Snippets ............................................. 7
“GET IT” Concept Grabbers
Robert Meichau and Richard Faircloth, Ph.D.

Three Selected for Robert Anthony Scholarships .......... 11
Richard Faircloth, Ph.D.

Teaching Tips ............................................ 13
Spider Web Analysis
Linda L. Burrroughs

Johnny K. Lloyd, Ph.D.

HAPS 2003 in Review ...................................... 16
Review of Workshop #105: How to Make a Good Lesson Even Better
Using the APS Archive of Teaching Resources to Enhance Your Teaching
Margaret Weck, Reviewer; Melinda Loye and Dee Silverthorn, Presenters

Review of Workshop #106: Cancer as an Integrating Topic for Anatomy and Physiology .......... 17
Patricia Bowne, Presenter and Reviewer

Review of Workshops #505 and #702: Identifying Lecture Topics in Anatomy and Physiology .......... 19
Mary Lou Bareither and Jane Morano, Presenters and Reviewers

Review of Workshop #601: Anatomy Becomes the Grammar of Art
Janet Sherman, Reviewer; Sabin Howard, Presenter

HAPS Committee Reports .................................. 20
Why Does HAPS Have Regional Directors?
Mary Brecken

Regional Conference Committee Report ......... 21
Jasmine Mydlo

Advertising in HAPS-Educator .......................... 24

HAPS-Educator - Spring 2004 - page 2
Groucho Marx said, "Time flies like an arrow; fruit flies like a banana." How true. For those with interests in taxonomy and politics, the arrow of time has made a sagittal section dividing the country into left and right parts. But those are topics to be discussed during moments of relaxation at the Calgary Conference. So plan on attending the 18th Annual Conference in Calgary, Alberta, Canada, from June 12-17. Aside from stimulating and informative update seminars and workshops, it will be an opportunity to relax with colleagues and ponder, well, everything. Go to the Meetings page of the HAPS Web site (http://wwwhapsweb.org) for information and registration forms for the Conference. Izak Paul, the Conference Coordinator, invites you to visit the Conference Web site, which has lots of additional information on recommended places to visit on your own in the Rockies.

In other conference news, a contract has been signed with the Marriott St. Louis Pavilion Downtown for the 2005 Annual Conference in St. Louis, Missouri. The conference will run from May 28 to June 2. So start thinking about a ride to the top of the Arch! Contract negotiations with hotels for the 2006 Annual Conference in Austin, Texas, are underway and are likely to be completed by the time this article goes to press. So polish up your Texas two-step.

Others events of the last few months include:

- Mike Glasgow and friends have been working on the revision of the Constitution and Bylaws. Many members and officers suggested changes to make these documents more flexible and consistent with the way HAPS operates. The proposed revisions were reviewed by the Board of Directors (BOD) and returned to Mike with the BOD's suggestions. The membership can plan on voting on the amended Constitution and Bylaws at the annual meeting in Calgary. The amended Constitution and Bylaws will be posted on the HAPS Web site (http://wwwhapsweb.org) prior to the meeting.

- The BOD accepted the Grants and Scholarships Committee recommendation to award Robert Anthony Scholarships to Ken Hoekstra, Muffie Slater, and Sherry Stewart. For more information on this scholarship award, new members should visit the home page of the HAPS Web site. Also see article on page 11.

- As a cost savings measure, communications between Regional Directors and their constituents will be by email rather than postal mail.

- For another major cost savings measure, the Annual Conference Registration packet will include workshop titles, but not workshop abstracts. The abstracts will be available on the HAPS Web site (http://wwwhapsweb.org) and will be included in the conference program.

- The BOD approved $510 to be used to purchase a liability insurance policy that protects HAPS against property damage and from "slip and fall" claims at the annual conference.

- As of December, there were 1070 HAPS members. Efforts to recruit new members and to retain current members are continually underway. Many A&P instructors are not yet aware of our organization and its many benefits, so spread the word among your colleagues!

- Ads to recruit new members and to promote the Calgary Conference have been placed in the American Biology Teacher and BioScience.

- The BOD charged the Membership Committee and Committee Chairs to increase membership participation in committees by finding ways to match the interests of new and old members with the appropriate committees.

- The Core Curriculum Committee has been renamed the Curriculum and Instruction Committee. The general outline of course content in a two-semester A&P course is relatively stable. However, A&P can be taught in many different ways. Those with an interest in different teaching methods, hybrid courses, and distance learning are encouraged to become members of the Curriculum and Instruction Committee. Go to the HAPS Web site (http://wwwhapsweb.org) to contact the committee.

- The Federation of American Societies for Anatomy (FASA), which I described in the Winter issue of HAPS-ED, has undergone some developmental changes. The name has been changed to the Coalition of American Societies for Anatomy (CASCA) to reflect a less formal relationship. Members of CASCA are the American Association of Anatomists (AAA), the American Association of Clinical Anatomists (AAC), and HAPS. Look for information about CASA on the HAPS Web site. The plan is to share information about each of the member societies and to provide links to internet discussion lists, meeting information, etc.
A new HAPS committee, Partners Association Committee, is charged with developing closer ties to other organizations, such as CASEA members, the American Physiological Society (APS), the Association for Biological Laboratory Education (ABLE), and the National Association of Biology Teachers (NABT).

A cadaver lab design document is now posted on the HAPS Web site (http://www.hapsweb.org); thanks to Paul Kriger and the Cadaver Use Committee.

Murray Letten reports that the HAPS-EDucator archive project with the BiosciEdNet (BEN) Collaborative is proceeding on schedule. The HAPS-EDucator Archive contains all issues of the Society’s newsletters, except for the most recent two years. Starting in 1987, the first few newsletters were called The Anatomist/Physiologist. In 1989, the name of the newsletter changed to HAPS News. The first HAPS-EDucator appeared in August, 1996. To access the archives, go to the HAPS Web site (http://www.hapsweb.org), login, and go to the HAPS-EDucator page.

If you were counting, you noticed that I referred to the HAPS Web site no less than eight times in this article. The HAPS Web site is an important and readily accessible source of information about HAPS, and the membership directory can quickly connect you to other members. If you have not visited the Web site (http://www.hapsweb.org), please do so. Keep in mind that your Username is the email address you have on record with your membership registration. As you rush through the day and find you have only a few moments to keep up with HAPS, save some time and go to the Web site. And remember what Will Rogers said, “Half our life is spent trying to find something to do with the time we have rushed through life trying to save.”

FACULTY POSITION

East Central College is seeking a full-time Biology instructor for the Rolla, Missouri campus. The instructor will teach coursework to support allied health programs; general biology; microbiology; and anatomy and physiology. Master’s degree in biology or related field required; community college teaching experience preferred. Position available August 2004. Screening immediate and ongoing.

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HAPS 2005

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Pharmaceutical Sciences
St. Louis College of Pharmacy
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St. Louis, MO 63110
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mweck@stlcop.edu

Just as Lewis and Clark were planning their Expedition of Discovery in the winter of 1804, so should you, in the winter of 2004, begin planning your excursion to St. Louis for HAPS ’05.

Many of you will remember the previous St. Louis conference in 1995, and we are planning another wonderful conference in the heart of Downtown St. Louis within walking distance of the Gateway Arch and two Metrolink stops from the St. Louis Union Station Shopping Mall in one direction or Laclede’s Landing historical district two stops in the other direction.

St. Louis has long been the crossroads where east meets west and north meets south. We are similar enough to everyone else’s home to feel comfortable and different enough from other places to feel unique. We have a little something for everyone; from professional sports teams to the St. Louis Art Museum, from Nelly to the St. Louis Symphony Orchestra, and from the oldest college of Pharmacy west of the Mississippi River to cutting-edge medical research at a number of local institutions. Indeed “There’s More than Meets the Arch”®, so check out the wide variety of attractions in the greater St. Louis Area on the Explore St. Louis Website (www.explorelouis.com), the official website of the St. Louis Convention & Visitors Commission.

We will have more details in our next article in Summer ’04 HAPS-ED, so begin now planning to join us in St. Louis May 28 – June 2, 2005.

HAPS-EDucator - Spring 2004 - page 5
Highlights for HAPS 2004 – Calgary, Alberta, Canada

Preparations are well under way for the HAPS 18th Annual Conference from June 12th to 17th. Please see the Spring 2003, Summer 2003, Fall 2003, and Winter 2004 issues of HAPS-ED for a series of articles about Calgary, the surrounding area, and what to expect on your visit. More information is on our website at http://www.hapscalgary.org

Update Symposia (June 13 and June 14)

A Multidisciplinary Approach to Cardiac Function:
Challenges for Research and Teaching
Wayne Giles, Ph.D., Professor, University of California, San Diego

Exploring the Inner Universe: Functional Magnetic Resonance Imaging (fMRI) of the Healthy and Diseased Brain
Stephen Rao, Ph.D., Functional Imaging Research Center, Medical College of Wisconsin

Challenges in Anatomy Education
Richard Drake, Ph.D., Case Western Reserve University (Sponsored by AAA)

Curing Diabetes with Islets
James Shapiro, M.D., Ph.D., FRCS (Eng), FRCSG, University of Alberta

Brain Stem Cells
Samuel Weiss, Ph.D., Faculty of Medicine, University of Calgary

The Inflammatory Response
Paul Kubes, Ph.D., Faculty of Medicine, University of Calgary (Sponsored by APS)

Keynote Presentation (June 14 Banquet Speaker)
Breakthroughs in Cancer Research: Impact on Lab, Classroom, and Society
Randy Johnston, Ph.D. Professor, Departments of Biochemistry and Molecular Biology and Oncology, Faculty of Medicine, University of Calgary, President and CEO, Genome Prairie

Workshops at Mount Royal College (June 15 and 16)
A variety of excellent, enriching workshops will be offered on June 15 and 16. They will provide opportunities for sharing ideas with other educators.

And there’s more…

• Scientific and pedagogical poster presentations.
• Opportunities to visit with vendors. Many of these have very generously supported our conference. Keep an eye for a list of sponsors and vendors on the website.
• An afternoon/evening trip to the Royal Tyrrell Museum of Paleontology in the Badlands in Drumheller, Alberta June 15.
• An optional tour of the Canadian Rockies including Banff and Lake Louise on June 17.

See you in Calgary!! Yahooo!!!
EDU-SNIPPETS

“GET IT” Concept Grabbers

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EDU-Snippets is a column designed to let you—the members—share your personal or institutional educational experiences. So, here are this edition’s contributions!

For the sake of column continuity, we have done a bit of editing. We have also avoided quotation marks (except in-text). However, we think everyone will be able to tell where our introductions and commentaries leave off and where our contributors’ words begin. (In this issue we have tried to stress ways to tell if our students “Get It” in A&P education. We have also tried a modified outline format to help with the organization.)

I. Quickie “Get Its”

Some of our members sent in some fast and easy ways to help us make certain our students were “getting it.”

A. Ken’s Contribution

Ken Saladin (Georgia College & State University ksaladin@alltel.net) gave us a good example of the effectiveness of simple props.

When I reach my protein lectures in A&P I, of course I tell them about the ability of proteins to change shape in response to ligands, voltage changes, mechanical stress, and so forth, and how important this is to many protein functions. I try to remember to take a sheet of scrap paper with me to help them visualize some aspects of protein conformation. I weld this into a paper ball. I can easily shape the paper to make a passage through the ball and to show how ligated-gated ion channels work by manipulating the paper weld to open and close the channel; I can pull out a bit of the paper weld to form a little leg and flex this to represent the repetitive movements of a motor protein such as dynein or myosin, making the paper weld “crawl” across the podium; and I can use pockets in the surface of the paper weld (sometimes marking them with colored markers) to represent the substrate-binding sites of an enzyme and then show how denaturation of an enzyme changes the relationship of the binding sites and renders the enzyme unable to function. It is the cheapness of models; it is disposable; it is versatile; and it creates a lasting mental image that I can draw upon time after time in later lectures when talking about such things as ion gates and hormone-receptor interactions.

B. Point Repeats Available!

Craig Clifford (Northeastern State University, OK; clifford@nspak.edu) has a not so subtle method of making sure the students hear what he has to say.

Richard Faircloth, Ph.D.
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Arnold, Maryland 21012
RFaircloth@aa.edu

I have always been frustrated when grading lab reports. It appears that all of the feedback I give the students suggesting ways to improve the next report are for naught. The same sorts of errors just reappear! In an attempt to get the students to read my comments, I came up with the following idea and field-tested it with a relatively small physiology class this fall. I purposely graded the first lab report brutally. The grades were probably 15 points below where they typically would have been. Each one was returned to the student with a coupon (text follows):

Special Coupon - Redeemable (today’s date) only!

Bearer of this coupon will earn 15 points added to this lab report grade when presented in person to Dr. Clifford in his office. If not redeemed today, this lab report grade will automatically be reduced 25 points from the current score. Offer good while supply of extra points last. Redeemable by person whose name is signed below.

Name __________________________________________

One hundred percent of the students redeemed their coupons. As I sat down with the students, I went over my comments, explained their errors, and made suggestions for improvements. I felt better that at least I knew that the students had received the comments and had the choice of whether or not to pay attention.

C. Name that Structure!

Tom Lehman (Morgan Community College, CO; Tom.Lehman@MorganCC.edu) believes in pop quizzes and spot checks.

In my A&P class, there are two ways that I can quickly check to make sure students are getting the material.

1. I give pop quizzes on occasion. Admittedly, I sometimes warn them that a pop quiz will be appearing that week, but sometimes I do not. This is a quick 5-question quiz that takes the first 3 minutes of class, testing on material either covered last class or scheduled to be covered that day. After a few quizzes, the students learn to keep up with the material, and I

Eda-Snippets - continued on page 8

HAMP® Educator - Spring 2004 - page 7
can quickly see if they really are keeping up and/or really are "getting it."

2. I also use spot checks. I have the students, one at a time, come up and identify a number of structures throughout the semester. For example, I have a number of cell models, and the students know that they will need to identify the 11 numbered structures (and tell me what each does). If they do not get it right, they simply try again the next day. There is a deadline, but most of the students get through this pretty quickly. I do the same with the bones of the skeleton, the muscles of the body (that we build with clay on our Mannikins), and the nerves of the brain, spinal, and autonomic nervous systems. This helps me to see who and how many are keeping up with the material and what concepts we still need to review. This also removes some of the test anxiety that students have when they take their lab exams (since they have to work through being put on the spot by me during the spot checks). My lab exam scores have improved considerably in the two years that I have been using these spot checks.

D. David's Dictums
David Evans (Penn College, Pennsylvania State University; devans@etc.edu) also had some quickie spot check type suggestions for us. Here are some things I do:

1. While I am talking, I look for that pained face or distressed body language and ask the person if I need to repeat something. Often, if a person asks me to repeat a thing, that person is really saying, "I'm lost!"

2. I frequently ask for oral summaries from different members of the class. If the idea is complex, I ask a brighter student; if that person nails it, I try to elicit questions from others about that explanation. However, if the concept is simple, as a confidence-builder, I ask a poorer student.

3. I often throw in a "one-minute" quiz at the end of the class in which I ask a pointed question about some concept that I expect confused the students. I look over their heads and make comments on them (always in the mirror and not them) the next day, but I make it clear to the students that there is no grade on this quiz.

E. Colleagues Can Contribute!
Gail Jenkins (Montgomery College, MD; gjenkins@comcast.net) sent us a contribution from one of her non-member colleagues, Amanda Truth.

The best way to learn a subject is to teach it. Instead of a follow-up "review," I assign a brief topic from a previous lecture (Na/K+ pump, blood buffering, cardiac cycle, etc.) to a student (I like to choose a weaker student) and ask that student to "tell the story" of the process in five minutes or so at the beginning of the next class (sort of like, "mirrorning"). I can tell how much they are "getting" by the gaps in the "story." If it is worth extra credit, they usually do a great job.

II. Not-so-Quickie "Get It!"

Some of our members sent in some contributions that take a bit more time. We feel these are all valuable contributions to our concept of whether or not our students are "getting it."

A. "Get It!" with More Writing
Elizabeth Harper (Steinhardt School of Education, NY U; eh643@nyu.edu) told us of several of her writing ideas.

1. Include questions which must be answered by WRITING on all their weekly quizzes and exams. Often when students are forced to write on concepts, their misconceptions come out of hiding.

2. I also have the students keep a journal. I find that often any interpretation of a concept is quite creative, yet often always accurate. Sometimes, though, I love their insights, and I learn things from them as well.

3. In my more advanced histopathology class, I require students to read research and then to present it in class. Much of the time, they are also required to find links to Traditional Chinese Medicine Theory. This is interesting to me and challenging to them.

4. For my first semester anatomy lab, I make the students put together a project on the spine, which cannot be a written essay last semester I got some very creative results, including 2 poems on the spine, a comparative developmental anatomy of the vertebrate spine, a spine model made of Styrofoam, a few brochures on the spine, and an in-depth analysis of the backbone in yoga. The students must present their projects to the class. This is a great learning process in itself, but it also really finds out conceptual loopholes.

B. "Get It!" with Even More Writing
Augustine DiGiovanna (Salisbury University, GA; adigiovanna@salisbury.edu) gave us two more "getting it" ideas involving writing.

1. On occasion, I do the following with a particularly difficult topic. I give the students a one-sheet take-home open book "quiz" consisting of one essay question. The essay question asks them to explain a complicated concept that was presented in class. The student must use THEIR OWN WORDS, and, if they choose, their own labeled sketches of what they are explaining. The item might be process, a sequence of events, a set of cause-and-effect relationships, a defense of a position using course information, etc. I collect it, staple it and read them after class. Before returning them, I may ask constructive criticisms or add notes for students to see me. If more students show the same difficulties answering the question, I allocate additional class time to further work on that topic.

2. I do the following with individual students who come to a office for help or for review on a topic that relates structure to function, particularly when a process is involved (e.g., muscle co-contraction). I ask them to explain the process by sketching a describing their own diagrams of the structures and what they are doing during the process. The diagrams may or may not resemble ones I have presented in class or that are presented in the text. I diagrams may or may not resemble ones I have presented in class or that are presented in the text. I diagrams may be of any quality as long as students can explain what they are attempting to sketch. I do not do either of these "on a daily basis" though!
C. "Get It" with Mapping

Mary Lou Percy (Navarro College, TX, marylou.percy@navarrocollege.edu) uses concept mapping to help her students "get it." (Actually, she said she "toritures" them with it, but we did not want to include that word in her commentary. That is why we put it here in parentheses instead.)

I assign concept maps in the second semester A & P course. I keep the focus narrow, so each assignment is worth 10 - 20 points. I also require that the maps be done on the computer so I do not go cross-eyed grading. An additional benefit to this exercise is that it fulfills a computer literacy educational requirement mandated by the state.

In A & P I introduce the students to concept mapping at the end of the semester by concept mapping a sandwich in class. The only concept map assigned in A & P I is on the three tunics of the eye. The students must draw the structures, label them, and as well as the function of each organ. Concept mapping helps some students catch on that this is a way to study relationships.

In A & P II, I give different assignments each semester because we are a small school with an active grapevine. One particularly helpful concept map includes correlating hormonal functions and associated diseases of the endocrine system. Another good one is a concept map of the functions of leukocytes.

I also occasionally have student groups make concept maps for about 30 minutes of a three-hour lab. I have four sets of the cards I have made up for the endocrine system; two sets include the hormones of the hypothalamus, the anterior and posterior pituitary, while the other two sets include other endocrine organs, the hormones produced, and their functions. I will not let them use their books at first, but let them open them after they have worked for about 10 minutes. As the students are working in their groups, I can get a pretty good idea who is preparing for class and who waits until the night before the test to study. I have another set of cards for the arteries of the cardiovascular system.

D. "Get It" by Demonstration

Lakshmi Atchison (Chestnut Hill College, PA, latching@chc.edu) believes in student demonstrations.

The simplest way to know that students are "geting it" is when they use some examples to demonstrate their knowledge, or they refer to noteworthy articles, radio news reports, or headlines from newspapers related to materials discussed in class.

Here is one good example of a "getting it" demonstration by a student.

After completing a chapter on the skeletal system, I discussed the relationship to clinical medicine and emphasized various factors that affect bone growth and aging. I also emphasized the importance of dietary intake of vitamins (such as vitamin C, K, B12), minerals (such as large amounts of calcium and phosphorus, and minute amounts of fluoride, magnesium, and iron), and the roles of IGF's and sex steroids. I ended with a note on how bone can become porous and pointed out the basic problem of how bone resorption outpaces bone deposition in response to depletion of calcium and estrogen during menopause, leading to osteoporosis.

One of the students responded by bringing two long, identical pieces of Styrofoam™ and elegantly demonstrated the following. Into one of the pieces of Styrofoam™, she had punched several large holes and made it porous. The other was kept as a control with no holes. She placed both these Styrofoam™ pieces vertically on the table and put equal pressure on top of them. The control piece stayed the same, whereas the one with the holes came crumbling down due to its weakened state. The demonstration was meant to mimic severe loss of bone mass in the condition of osteoporosis. It was a great demonstration showing that the student was "geting it," and it was rewarding to know that she appreciated the subject material being taught.

E. "Get It" Quizzically

Two different members sent us some expanded quiz ideas. Here is what Herbert House (Eston University, NC, bioher@earthlink.net) suggested.

1. Give a 5-minute, 5-question quiz at the start of class followed by a discussion of the answers.

2. Give the students 1-2 minutes to write a summary of what has been discussed, then ask for questions or ask them questions.

3. Pose a question, then give the students time to formulate an answer or answers before calling on selected individuals.

4. Try a group quiz in which each group is able to collaborate on the answers, but each person is responsible for deciding whether or not to use the group answer or some other answer.

5. Use 5-minute "case" questions in which a problem is given to the class to solve, and each group works together to come up with answers to the questions.

F. "Get It" in a Fishy Sort of Way

Marjorie Peasall (Anne Arundel Community College, MD, mpeasall@gwworld.net) told us about "going fishing" for concepts.

When I am not pressed for time, one idea I use is a fun "fishbowl quiz." Each student reaches into the fishbowl and draws out two slips of papers bearing the names of bones (or muscles, etc.). They read the slips quietly to themselves, choose one, and put the other back. Then they proceed to the skeleton (or unlabeled diagram for some other system), and indicate where the bone is to be found, what other bones it articulates with, and what type of joint(s) articulate it to the remainder of the skeleton. Students do listen as each speaks because they know that they may pull a bone that articulates with the one being discussed, and listening helps them to prepare!

Sometimes as a review for a test, I will have a "review for the tests game." I make up a list of questions ahead of time. I divide the class into two teams (by month of birthday, blood type, eye color, whatever). The two teams face each other, and the first person in line gets the first question. That student may answer immediately, or may request one minute for a team discussion. After one minute, an answer must be given. If the answer is correct, that team earns two points; if incorrect, the other team may try for a correct answer to earn one point. The questions are asked alternately to each team. The next person in line is always designated as being the only one to officially answer the question. Score is kept on the blackboard. There is a great deal of enthusiasm by the team members, interest remains high as students review the answers.
Edu-Snippets - continued from page 9

for the upcoming test, and shaky knowledge is made evident in a
game-like situation.

G. “Get It” by Sliding Around
Cardy Johnson (Darlington School, GA, 
Lፍ teléfono 1615, 1DarlingtonSchool.org) has a new idea for using students

to model the sliding filament model.

1. Line the students up in boy-girl-boy girl etc., order. The 
boys are the myosin (thick-for obvious reasons), girls are the 
actin (thin). All students stretch their arms out with hands 
overlapping to the level of the wrist.

2. Next, I release the calcium ions, and the girls “let their 
fingers do the walking” and “walk” up the guys arms. I usually 
have one of the guys (on the end) “anchor” to a wall to be 
the origin of the muscle. As the first girl draws closer to the guy 
(her hands have now reached his shoulders), the other girls and 
girls have to slide with her as they “walk up the arms too.”

This demonstration lets me show that a muscle fiber moves a 
little bit, but the insertion actually moves “a lot too,” by the time 
the fibers have all contracted. I can also talk about how the I bands
and H zones have disappeared once a muscle is contracted, and
what happens when a sarcomere is stretched too long or is already 
overlapping. (Obviously it cannot stretch much!)

H. “Get It” All in the Cards
John R. Sterle (Ivy Tech State College, IN, jsterle@ 
ivy-tech.edu) uses endocrine cards to help his students “get it.”

For the endocrine system I make 8.5 X 11 flash cards set up
like this.

Cards with names of glands - students give location.
Cards with location - students name glands.
Cards with hormones - students name producing glands.
Cards with names of glands - students name hormones produced.
Cards with names of target organs/issuers - students name 
hormones and vice versa.

Originally I called this game, “Stand by Your Gland.”
However, some students felt uncomfortable standing holding cards,
in front of them. So I let these stay in their seats while I hold up the
cards, then they give the answers.

III. Collaborative Communication

Steve Kish (Maskingta Area Technical College, OH, 
skish@MAC/v TEC.OH.US) sent us a note that emphasizes the 
importance of good communication between Anatomy and 
Physiology and the departments and schools out A&P courses

I teach Anatomy and Physiology at a two-year college. I have 
developed a very close relationship with the instructors teaching 
Health related fields (Radiology, Physical Therapy, Occupational 
Therapy, Medical Lab, and Physical Assisting). I am constantly 
getting feedback from them about the students’ level of retention 
as they progress from Anatomy and Physiology into their chosen 
fields. I have found, in the six years I have been teaching, that the 
retention level of the students has been constantly increasing.

Technology instructors have been able to score back their Anatomy 
reviews and cover more material specific to their field of study. I 
have also developed, through my wife, a licensed COTA (Certified
HAPs-EDUCATOR - Spring 2004 - page 10

Occupational Therapy Assistant), a relationship with some of the 
clinical instructors in the area. I have gotten feedback that our 
students, during their clinicals, have been able to apply what they 
have learned in my Anatomy courses in the clinics. The essence 
of this is communication and collaboration. I also like to incorporate what I call “voidedy knowledge 
into my lecture. The students seem to be able to remember that bit 
bit better than some of the other material I present in class.

IV. Oldies-but-Goodies Revisited

Sueann Gaffey (Truman State University, MO, 
sgaffey@pamun.edu) sent us some tidbits that relate to some of our 
previous EDU-Snippets. Of course these are always welcome.

This site has a lot of good information about lymphedema
including good photos of affected patients and photos of available 
treatments, I show these to my class, http://whwilbs.com/

Here is a site with basic explanations relating lymphedema
breast cancer/axillary node surgery. http://region4.sricate.osd.m
breast_health/lymphedema.html

Also, an unrelated snippet - going back some time

To learn the cardiac bones.......

Proximal row, laterally to medially:

- Scott left the party... (scapuloid, luteate, triquetrum, pisiform)
- Distal row, lateral to medially:

- To take Commie home. (trapezium, trapezoid, capitate, hamate)

Smallest joints: carpometacarpian, metacarpophalangean, intermetacarpal “Dow-Jon
Industrial.”

V. From the dark Side

Ann Oronoos (whose school and email address are known this
EDU-Snippets’ desk alone) explains that she knows 1

students are getting it by the number of staples required to be
their assignments together. She also feels that if it is taken by one
not pen to correct a test, her students have probably analyzed
something. We are not going to argue with this type of scint and

VI. And We Hope You Will....

Keep these cards and letters coming! We thank you all
your EDU-Snippet contributions. The next deadline is April
2004. Plan ahead - that is Income Tax Day and we ask you consider your priorities! We are adopting a thematic approach EDU-Snippets this quarter: What are your great ideas

preventing topics/concepts, etc. involving the integration
coordinator of the nervous and endocrine systems? You can use
your ideas now and maybe you too will see your EDU-Snipp
print!
Three Selected for Robert Anthony Scholarships

Richard Faircloth, Ph.D.
Chair, Grants and Scholarships Committee
Department of Biology
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RFaircloth@aaccc.edu

The Robert Anthony Scholarships 2004 for new instructors in Anatomy and Physiology have been selected. Congratulations to Ken Hoekstra, Langara College, Vancouver, BC; Muffie Slater, Elgin Community College, Elgin, IL; and Sherry Stewart, Navarro College, Corsicana, TX.

The purpose of the scholarship is to encourage instructors during their first three years of teaching anatomy and physiology to network with seasoned colleagues by attending the Human Anatomy and Physiology Society Annual Conference this year to be held June in Calgary, Alberta, Canada. The award covers the registration fee and cost of the banquet at the annual conference.

Criteria:
1. Must be a HAPS member in good standing
2. Must be a full-time faculty member
3. Must verify their status by having a letter from the Department Chair or Dean stating that the applicant is full-time and in his/her first three years of teaching anatomy and/or physiology (same deadline as application)
4. Must have a teaching load that includes at least one section of Human Anatomy and Physiology

Applications were received by the Grants and Scholarship Committee at the end of 2003 and the recommendations of the committee were forwarded to the Board of Directors at their mid-winter meeting in Florida. The Board approved the recommendations of the committee, and the recipients were notified after the Board meeting by the chair of the Grants and Scholarship Committee.

There were three recipients this year, two in 2003 and one in 2002. The program is growing, and you can help it grow by donating to the Robert Anthony Scholarship at any time. The membership form has an option to donate during renewal of membership or when a new member joins the society. For further information contact:

Dr. Richard Faircloth, Ph.D., Chair
Grants and Scholarship Committee
410-777-2272 or rfaircloth@aaccc.edu
~SPECIAL ANNOUNCEMENT~

21st Annual Meeting ~ June 9-11, 2004
St. Mary's College of California; Moraga, CA

22nd Annual Meeting ~ July 20-22, 2005
Marriott Financial Center; New York, NY

The AACA wishes to invite all HAPS members in the San Francisco and New York City areas to attend the Wednesday or Thursday sessions at a special per day registration fee of $25 (lunch included in S.F.). The scientific sessions on these two days focus on issues of anatomical education and the clinical relevance of anatomy in a wide variety of health care settings. Registration at the door.

For more information about the meetings and the Association you are invited to visit our website at:  http://www.clinicalanatomy.org/
The Spider Web Analysis model was developed about ten years ago in an effort to encourage self-testing by our students. They needed instant feedback on whether or not they had mastered the material. I hoped to replace items such as "I studied really hard" or "I knew this stuff!" with the realization that they did not understand the concepts before this lack of understanding became apparent on quizzes or exams. This analysis model has been highly effective with my students, so give it a try with your students.

To demonstrate the analysis model, first decide on a topic, which can be broadly or narrowly focused. Write the key word, long bone, in this example, in the center of a blank page. Then write all anatomical and physiological words that might pertain to the long bone, scattering those words around the page. It does not matter how many terms are used; terms can be added or deleted as students mature the use of the study model. The demonstration page might look like this:

At this point, ask the following question, "What has THIS to do with THAT?" As the question is answered, draw connections between words with directional arrows. For example, what has "blood nourishment" to do with "membranes?" The ability to answer that question requires a thinking process beyond rote memory. While the question may appear simple, to correctly answer it requires active knowledge of the material, not mere acquaintance. Connections can be made in both directions until the desired detail is attained. Questions such as "What do condyles have to do with articulation?" (serve as a point of flexion alignment; rounded surface permits movement; need smooth surface to function properly; are composed of resilient cartilage for better wear, etc.) could be discussed and described further. Describing what articulation has to do with condyles (connect to pathologies of formation and/or wear; angles of function; replacement surgery — whatever was lectured and studied as part of the course) leads to more interaction and understanding of the subject as the Spider Web of Analysis begins to build. Answers with flexibility and without self-limiting characteristics result, often prompting new ideas to be discussed with the professor.

The students quickly see that they need to think about the interactions between the topic and the surrounding terms. They also identify many ideas that they did not anticipate emerging from this association approach. The new insights the students gain is one of the things I like best about this technique. They realize that they are not as familiar with the material as they thought when Teaching Tips - continued on page 14

HAPS-EDitor - Spring 2004 - page 13

Spider Web Analysis

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Teaching Tips - continued from page 13

they start stumbling as they try to draw these connections. Stumbling is a clue that their knowledge is piecemeal. As they draw the connections, they will critically analyze their answers, an important technique in gaining understanding.

When students start working with this Spider Web Analysis method, they quickly see its potential as a study tool. Answering questions about one connection usually leads to increased discussion on related material. Better students might even work at developing remote connections in an effort to really challenge their peers.

As students practice this Spider Web Analysis method using several major terms, their ability to analyze, express, and join ideas improves. This method works well with individual students as well as with small groups.

Directions to the Students:
1. Select an area or topic for study. Center the key word on a blank page.
2. Write related words around the key term; related words are not limited to terms, but may include concepts, adjectives, symbols, etc.
3. As you connect one word with another, use a directional arrow and ask the question, “What has this to do with that?” Try to answer the question in the other direction.
4. If descriptions do not flow smoothly and the details are sketchy, you have not studied enough. Open those textbooks and notes and work at putting ideas together in terms of how they relate to each other.
5. You will be surprised to realize both your lack of knowledge and at how quickly you will gain a deeper understanding of the topic!


Johnny K. Lloyd, Ph.D.
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Aurora University
Aurora, IL

In addition to traditional laboratory and lecture exams, the assessment of the student’s knowledge in A & P can be accomplished through alternative and creative methods. High-tech opportunities to enhance student learning do exist, but in the current environment of institutions watching their budgets, the instructor may want to consider economical and low-tech techniques. As anatomists, we know that there is more than one way to skin a cat.

I teach a sophomore level anatomy & physiology course that involves a detailed study of the relationship between structure and function of all organ systems in the human body. Students in the course are health science (pre-health professional), nursing, and exercise science (athletic training) majors. Knowing the surface anatomy of the musculoskeletal system is vital to the allied health student. The ability to recognize specific anatomical landmarks on a body for physical assessment is necessary in order to identify the pathology to implement the treatment.

In my class, students generate a surface anatomy musculoskeletal poster using photos from various media publications, such as newspapers (especially sports pages), and magazines. Guidelines include: using no muscle building or pornographic photos; presenting a total of twenty-five muscles and fifteen bones; locating muscles and bones in three specific regions (head, neck, upper torso/arms, and hip/legs); and designing a table to list origins, insertions, innervations, and functions of muscles. Students are graded on these criteria: following directions, correctly identifying muscles and bones, neatness, and creativity. The poster project is 6.4% of their total grade for the course; Figure 1 is an example of a student’s poster.

Dissection of wet specimens (especially the cat) has been a standard practice in many A & P courses. In my two-semester course, I have added the oral presentation of the student’s cat dissection. In the first semester, students identify specific internal organs from the endocrine, digestive, cardiovascular, respiratory, urinary, and reproductive systems and learn the functions of these organs. Students work in pairs to dissect one cat, but on the day of evaluation only the professor, student, and dissected cat are present. I ask the student to identify a random muscle, nerve, or an internal organ and to give its function. The student has approximately 30 seconds to answer the question. The A&P I students are responsible for being able to identify 47 muscles and five nerves (brachial plexus and sciatic) (See Table 1). The A&P II students are responsible for locating fifty organs and for knowing specific physiological facts about these organs (See Table 2). The oral presentation in the first semester is 6.4% of the total grade and in the second semester, it is 10.7% of the total grade. This exercise provides students the experience to think on their feet quickly, a skill which will help them in the future to be competent health care providers.

HAPS-EDucator - Spring 2004 - page 14

Figure 1

Teaching Tips - continued on page 15
At the end of each semester, I conduct a course evaluation that questions which teaching methods have enhanced the students’ learning. The students are given a rating system: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. They are also asked if they agree or disagree on whether the muscle/bone poster, the oral cat dissection, and the CD-ROM’s which are included with the textbook have enhanced their learning of anatomy and physiology. Selective questions and figures located on the CD-ROM’s are used on the lab exams. It appears there is no significant difference in the three accessory ways of learning anatomy & physiology. However, students agree that the poster and oral cat dissection do enhance learning. So colleagues, there are alternative, engaging, economical, and low-tech evaluation tools for A&P.
This workshop was divided into two portions. The first component was an example of an in-class exercise. "Membrane Potentials: A Discovery Activity" was written and presented by Dee U. Silverthorn. This is a hands-on activity in which students physically move chips representing ions from one side of a line representing a cell membrane to the other. These simple materials allow students to examine how other membrane components like ion channels and active transporters might influence the tendency for ions to move in one direction or another across the membrane. The concepts of concentration gradients and electrical gradients are presented in a fashion that should be understandable to most students. The participants, working in groups of three or four, took the student materials and worked through most of the exercise in 30 minutes.

After participants had experienced the exercise, Melinda Lowy, the American Physiological Society Higher Education Programs Coordinator, gave a brief tour of the APS Archive of Teaching Resources (http://www.apsarchive.org). This site contains numerous exercises and presentations that have been reviewed for accuracy of physiology content, either by the scientific review board of the site or by the editorial board of the journal of first publication. Many of the materials currently in the APS archive were first published elsewhere. The analysis of the ability of Dr. Silverthorn’s exercise to uncover student misconceptions concerning membrane potentials was originally published in the APS journal, Advances in Physiology Education. [This article, rather than the exercise itself, is listed in the archive.] Copyrights to the learning objects belong to the authors or the original publication source, not to APS or any of the other collaborating partners. Those who have used materials from the site can comment on particular learning objects. The comments are available on an attached bulletin board for the author and future potential users to see.

Each individual exercise, animation, simulation, PowerPoint® presentation, and exam, is a separate "learning object." The search function is designed to be user-friendly. All searches start off inclusive only become more restrictive with each modifier. In this way the browser can find "kinds" of objects of interest on a particular topic without knowing specifically which kind of objects are already in the archive.

Because the site is funded in part by a NSF grant (DUE-0085840), the search will be asked to register so that the usage of the site may be tracked, but is assured that return marketing will not result from providing higher name and school affiliation. The search may get through the fact sheet concerning a learning object without registering, but may not view the actual learning object without doing so. The HAPS logo and link to the HAPS web site appear on the archive’s home page as the first partner organization. The APS Archive of Teaching Resources is http://www.apsarchive.org. Check it out!
This session's focus was on using the topic of cancer to create exercises that require students to pull together their knowledge of different physiological and anatomical concepts. The exercises could be tailored toward specific systems (e.g., pancreas and liver cancer could be used as part of a module on digestion) or could be presented at the end of the course as a summary activity.

A major learning challenge addressed by these exercises is students' difficulty in dealing with the idea that the body is undergoing more than one process at a time. In cancer, for example, several processes are happening at once. The tumor, if malignant, is causing organ failure; if benign, it may be causing increased secretion of the organ's normal enzymes or hormones. Whether benign or malignant, the tumor is expanding and pressing on adjacent structures. If malignant, it may be producing hormones not normally produced by that organ (ectopic hormones).

Two of the exercises presented used tumors drawn on anatomical illustrations. In my experience, this works best if the illustrations are tumors of major organs (liver, pancreas, kidney, or lung). The first activity focused on physiology and required students to identify which organ the tumor affected, review that organ's function, and infer what would happen if that organ failed due to cancer. Then they chose one parameter that would be thrown out of balance by the organ failure and told how the body would try to bring it back into balance. The second activity was an anatomy-focused and required each group of students to write a description of their tumor, using anatomical terminology, then exchange their description with a second group. They tried to interpret the other group's description and increase the tumor on a clean illustration.

After finding the tumor's location on a lab model, students measured a 3-cm radius around it and identified the structures that might be compressed as the tumor expanded, making inferences about the consequences.

For those who teach histology, several examples of histological specimens of cancer were presented with URLs at which more information might be obtained. The accompanying exercise dealt with the differences between highly dedifferentiated, malignant tumors and slightly dedifferentiated, benign tumors. One activity involved using an online doubling time calculator to determine whether a lesion observed on two subsequent X-rays was growing fast enough to be classified as malignant. Another activity presented the disease "Multiple Endocrine Neoplasia Type II" in which a client develops malignant tumors in some endocrine organs and benign tumors in another. Students were asked to infer changes in hormone levels in this client as the malignant tumors destroyed some organs, while the benign tumors caused hypersecretion in others.

An exercise on oncogenes and proto-oncogenes was based on review of a basic G-protein-based second messenger pathway and led students through the concept that each protein involved is coded for by a gene. If the pathway is involved in response to a growth factor, mutation in any of those genes might cause disordered growth in the cell. A more complex example was presented (the ras pathway, also available in animated form on the Internet), and the idea that the same cell might develop cancer through many different mutations in this pathway was discussed. A cell might also develop cancer from mutations in the genes for protein controlling cell cycle checkpoints, e.g., p53. Handouts included cartoon versions of normal cell division and simian sarcoma virus, the URL for a cell cycle computer game, and a worksheet comparing different breast cancer mutations.

The presentation sparked lively discussion, most of it dealing with ectopic hormone production, dedifferentiation, the tissue types of secondary tumors, and the importance of molecular diagnosis of cancers. We also touched on intra-tumor variability and its contribution to relapse after apparently successful treatment. I enjoyed presenting this and greatly appreciated the informed, enthusiastic audience.
Introduction

The human physiological anatomy course is a traditional didactic presentation of the anatomy and physiology of the human body. The course consists of four one-hour lectures per week. Three of the lectures each present a specific topic and the fourth lecture is designated as an open discussion during which the students may ask questions. The questions may be over a general topic presented in lecture or may be about a specific subtopic that needs some clarification. The number of students presenting questions voluntarily for the open discussion is very low, and frequently no questions are asked. This not only makes it difficult for the instructor to determine what topics are unclear, but it also does not force the students to sort through the material to determine what they do not understand. It demonstrates very little student-instructor interaction in a traditional didactic classroom. In order to assist the instructors in determining what topics are most difficult for students in anatomy and physiology courses and help remedy the lack of student-instructor interaction, the Muddiest Point technique was implemented. The Muddiest Point technique consists of asking students to determine one or two lecture topics that they found the least clear or most confusing then submit these questions to the instructor for clarification. The instructor uses this information to determine which topics need more clarification and possibly more time during lecture presentations. It also forces the students to improve their attention and listening skills during class and learn terms and facts of the topics to improve their conceptual understanding so that they can formulate questions to be submitted. Ultimately this will stimulate more student-instructor interaction.

Methods

During the first week of the semester, the Muddiest Point technique was introduced to the students. They were expected to respond by e-mail to the instructor with at least one question on a topic that they found unclear within that week's lectures. The instructor would evaluate the muddy points. Then, responses would be given during the open discussion directly so the student via e-mail or in future lectures. A summarized response was also posted on Blackboard, a university internet site for the course. The number of questions asked per week by each student was recorded. Students received credits if they submitted at least 10 questions per semester (with no more than 2 per week). This method encourages students' participation and ensures that students would submit questions regularly throughout the semester. Any additional questions submitted by the students were recorded. The instructors categorized each submitted question according to topic. The number of questions actually submitted by each student was also compared with that student's final grades in the course. There was an assumption that there would be a correlation between student performance (good, average, poor) and the use of this teaching method to improve their understanding of the course material. At the end of the semester a survey was given to the students to evaluate their perception of the Muddiest Point technique.

Results

The topics which received the most questions per time spent in lecture were determined the most unclear. In the fall semester, these were: 1) Back Muscles, 2) Muscle Mechanics, 3) Excitation/Contraction Coupling (Fig. 1). In spring semester, the topics were: 1) Digestion, 2) Female Reproduction, 3) Immune System (Fig. 2).

Fig. 1

Fig. 2
When comparing the number of questions asked by a student to the grade received by that student in the course, there was a direct correlation between the number of questions and the grade received. Those students asking the most questions received the highest grades (Figs. 3 & 4). In the fall semester the correlation of the percentage of students asking muddy points to the grade they received was: A - 52%, B - 35%, C - 30% and D - 16%. In the spring semester, the correlation of the percentage of students asking muddy points to the grade they received was: A -76%, B - 65%, C - 54% and D - 54%.

Fig. 3

Fig. 4

The survey administered to the students at the end of each semester overwhelmingly indicated a positive opinion to the Muddiest Point technique (Fig. 5).

Discussion

The Muddiest Point technique will help the instructor evaluate topics that need more clarification and/or more time during a lecture. It provides the instructor with a mechanism to evaluate the level of understanding of the students in the class. It will also allow the instructors to form a collection of topics that are difficult to teach and understand. For the students, this will ultimately improve their understanding of the topics presented because additional time and further explanation of these topics will be provided. This teaching method will also increase students’ attention in a large lecture class, as well as improve their listening skills and conceptual thinking about the topic since they will be expected to respond with muddy points. This teaching method should stimulate student-instructor interaction by providing a hesitant or unprepared student a safe method of asking questions.

We want to thank Adam Longworth for developing the Muddy Point software used to organize and analyze the data. We also wish to thank the students who assisted in this study: Hope Ham, Audrey McMullen, and Cyndi Misichia.

References

3. College Board, 1983. What Students Need to Know and Be Able to Do. New York: College Board.
"What a privilege!" was the unanimous reaction of those of us who stayed for the final workshop with sculptor and art teacher Sabin Howard. Howard specializes in the human figure, inspired in large part by the sculptors of the Italian Renaissance. He spoke about how he employs anatomy in both his art and teaching and shared with us a distinctively artistic perspective. His work is based on the idea that "we are all put together the same way." Using methodological techniques, from general to specific templates, a proportional system (based on subcutaneous landmarks), and a robot system (by part of the body moves in isolation), he creates figures of "überbeings" rather than portraits. Howard says, "I am not interested in anatomy... I can't design figures unless I know what I am seeing... how things fit together,... overlap and spin." Howard manipulates anatomy in his art to push his point and convey the psychology of a figure. For example, in one figure the distance from the bottom of the pubic symphysis major muscle to the acromion process was lengthened to make the figure look as if it is being pulled down.

Doing and teaching this type of sculpture involves using appropriate anatomical terminology and a thorough understanding of how skin, muscles, and bones interact. Surface anatomy is used for expressive purposes. Howard's art students must be familiar with many anatomical terms, a few of which are anterior superior iliac spine, posterior superior iliac spine, ischium, conlyle, and acromium. Did you know that the eighth rib is the most anterior point in the human body? (I did not.) Using flayed figures, (e.g., in which muscles (such as the abdominal and rectus spine) are placed in groups in an important element in Howard's work and teaching. Several of Howard's philosophies relating anatomy to art are: muscle girdles delineate the borders of form; muscles are parallel to bones; no part of the body moves in isolation; muscles are not only described in terms of origin and insertion but also in terms of high points; and movements at joints are never simply flexion and extension, they are always spirals.

As an artist, Howard also has a luxury in which scientists cannot indulge. He can ideate the body emphasizing the unity of form. "Art is not real, it is an illusion." Anatomy and form are used to create "material spirit or energy." Howard has used the same model since 1996. This model, which has low body fat to emphasize detail. His sculptures intentionally capture "überbeings." As an anatomy teacher working with pre-clinical students, I am forced to constantly emphasize both unity and diversity. We humans vary on the inside as well as on the out, even when everything is "normal." It is nice to be able to bring both perspectives. To see some of Sabin Howard's pieces along with his comments, visit www.sabinhoward.com.

HAPS COMMITTEE

Why Does HAPS Have Regional Directors?

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Trinity Valley Community College
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HAPS Regional Directors are elected by the entire membership and exist to ensure that there will be individuals from across the continent serving on the Board of Directors. They are the liaison between the members of HAPS and the Board of Directors. There are currently 4 regional directors representing the Western, Central, Eastern, and Southern regions. Their term of office is two years and they can serve only two consecutive terms. If they choose to run for a third term, they must wait one year before running again.

Regional Directors are charged with promoting involvement of their region's members in the Society's activities as well.
regularly communicating with these members via small group meetings and written communications. To this end, they serve as members on several committees, including the Membership Committee and the Regional Conference Committee. They promote regional conferences and have a goal of having at least one conference in their region during their term of office.

The Regional Directors are voting members of the Board of Directors and participate in all board communication including email and conference calls. They attend the January planning meeting as well as the annual meeting. The annual meeting is usually held a day or two before the annual convention begins, sometimes, when there is a great deal of business, there are meetings held during and after the convention. The Regional Directors then communicate with their members after the January planning meeting and after the annual meeting. This communication can be by postal mail or email. Members are encouraged to contact their Regional Director ANY TIME with any concerns or with items for discussion by the Board of Directors. The Directors’ addresses are listed on the inside front cover of the HAPS-Educator, on this page, and on the website www.hapsweb.org.

An excellent way to take your involvement in HAPS to a higher level, to observe the workings of the Society first hand, and to help represent the members in your region is to consider representing your region as a Regional Director. Watch for the nominations forms each year in HAPS-Educator to add your name to the nominations, or contact the President-Elect to volunteer to run for Regional Director. It is not too early to begin thinking about the possibility of YOU running for the office of Southern or Central Regional Director in 2005.

To identify what region you are in and who your Regional Director is, check the list of states and provinces below.

Eastern: Elizabeth Harper
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US (states): AK, AZ, CA, CO, HI, ID, KS, MT, NE, ND, NM, NV, OR, SD, UT, WA, WY

Canada (provinces): AB, BC, NU, NT, SK, YT

Several regional conferences are in the planning stages for the remainder of 2004 and 2005. Some have not declared specific dates yet, but watch the HAPS web site (www.hapsweb.org) or contact the Regional Conference Committee for more information. Judith Osborn hosted a one-day conference on October 11, 2003, at the La Plata campus of The College of Southern Maryland; Tom Lehman hosted a two-day conference on November 8-9, 2003 at Morgan Community College CO; and Mike Timmons hosted a Midwest Regional conference on February 28, 2004 at Moraine Valley Community College IN. Gerti Wright in Virginia is considering hosting a conference during the Fall 2004 semester.

HAPS is trying to reach out to members. Due to current economic conditions, people would like to have more local conferences in local areas. Some cannot attend the national conference but would like to receive updates in their teaching field. Regional conferences provide an excellent opportunity to do that at low cost.

Please consider hosting a regional conference in your area, thus providing your local HAPS members and other interested individuals an easy access to HAPS experience. The first step is to contact your administration to get its approval. Then set a date and select your committee. Contact either your Regional Director or the chair of the Regional Conference Committee for further information. See page 22 for a Regional Conference Proposal Form.

Regional Conference Committee Report

Javunik Mody
Chair of HAPS Regional Conferences Committee
Anne Arundel Community College
101 College Parkway
Arnold MD 21012
jmody@acc.edu
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Rates and specifications effective September 1, 2002

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