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HAPS-EDucator
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Registration: Preregistration $150 (before Feb. 1, 1998); $165 (Feb. 1-April 30, 1998); $175 (after April 30, 1998).
Hotel: Radisson Plaza Hotel; 815 Main Street; Fort Worth, Texas 76102
  Reservations: (800) 333-3333
  Front Desk: (817) 870-2100; Fax: (817) 335-3408
  Room Rates: $85 single; $105 double
  Room amenities: iron/ironing board, coffee maker, hair dryer
  Location: downtown Ft. Worth; two blocks from Sundance Square
Make those hotel reservations by April 23, 1998 to ensure that you have a room.

Travel: The nearest airport is Dallas-Fort Worth International Airport. It’s approximately 20 miles (20-30 minutes) from the hotel. Shuttle transport to the hotel is $8.00.

Official Airlines: American Airlines is the official airlines for the conference. Reservations and ticketing can be arranged by calling (800)433-1790. Be sure to refer to HAPS starfile number or AN number (3288UD) to get the appropriate discounts. If booked and ticketed 60 days or more in advance, you will receive 10% off the lowest applicable fare or 15% off regular coach fare. If booked or ticketed at least 7 days in advance, you get 5% off the lowest applicable fare or 10% off the regular coach fare. (Note: these discounts are not valid for use in conjunction with any other discounted fare such as senior, child or military/government.)

Weather: In May the average temperature ranges from a high of 84 to a low of 62, but temperatures in the 90’s are not unusual. Heavy rainfall with frequent thunderstorms is typical. On the positive side, with our famous Texas wildflowers in full bloom, spring in the Fort Worth area can be an awesome experience.

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12Th ANNUAL CONFERENCE
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Co-hosted by
TEXAS WOMAN'S UNIVERSITY
and
TARRANT COUNTY JUNIOR COLLEGE-NW

SYMPOSIA TOPICS
Endocrinology-Reproduction
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Ranger Baseball
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Fort Worth Stockyards
Historic Area and Billy Bob's Sundance Square—Unique Shops and Restaurants

WORKSHOP & POSTER PROPOSALS
are due by Feb. 15, 1998. Have you considered sharing a few of your innovative ideas with other HAPS members?
HAPS-EDucator

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HAPS-EDucator is the official publication of the Human Anatomy and Physiology Society (HAPS) and is published four times per year. Major goals of the Human Anatomy and Physiology Society are to promote communication among teachers of human anatomy and physiology in colleges, universities, and related institutions; to present workshops and conferences, both regional and national, where members can obtain information about the latest developments in the health and science fields; and to encourage educational research and publication by HAPS members. HAPS was established in 1989.

Annual membership dues are $30. Annual membership renewals shall be due on January 1, April 1, July 1, or October 1. New members shall renew on whichever date most closely follows the date of their initial membership. HAPS Hotline: (800) 448-HAPS (4277). Information on membership, meetings and more: Send correspondence to: HAPS, 222 S. Meramec, Suite 303, St. Louis, MO 63105. Check out our new webpage at: http://www.bio.psu.edu/haps

SUBMISSIONS TO HAPS-EDucator

Papers for publication, requests for information, positions available and wanted and letters to the editor are welcomed. Articles submitted on 3.5” double density disks are preferred—please include a hard copy as a backup. If references are included, please follow the methods suggested in: Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers, 6th Edition, Style Manual Committee (Council of Biology Editors) Cambridge. Cambridge University Press. 1994.

It is the policy of the Human Anatomy and Physiology Society (HAPS) that any advertising appearing in its publication must be related to the teaching of anatomy and physiology. The HAPS Editor and Editorial Board jointly determine whether an advertisement meets the criteria of the Human Anatomy and Physiology Society. Any advertisement that is deemed not to meet the needs of the organization will not be printed, and the advertisement plus any monies collected from the advertiser will be returned. The opinions reflected in advertising that appears in its publication do not necessarily represent the opinions of the Human Anatomy and Physiology Society. Advertisement of a product in the HAPS-EDucator does not represent endorsement of that product by the Human Anatomy and Physiology Society. Contact the Editor for information on advertising rates, advertisement size and the procedures for submitting an advertisement to HAPS-EDucator for publication.

DEADLINES FOR SUBMITTING MATERIAL TO HAPS-EDucator: June 1 (August Issue), September 1 (November Issue), December 1 (February issue); March 1 (May issue).
A CHANGE IN EDITORS IS COMING!! I informed the Board of Directors at the Annual Conference in Toronto that this would be my last year to serve as Editor of the HAPS-EDucator. There are many reasons for making that decision, but foremost among them is my need to focus on other areas in my life, both personal and professional. In July, 1998, when I step down, I will have held the position of Editor for six years, a very long time! HAPS and the Editorship have changed my life forever in innumerable ways. Among my most cherished memories and experiences are the rewarding interactions with other HAPS members and the many wonderful and caring people I have met. It has been a joy and a pleasure serving as your Editor. Thank you for your consistent support.

Caryl Tickner has accepted the role of Editor in Training and has graciously volunteered to help with the upcoming February and May issues so that I can devote more of my time to coordinating the 1998 Conference. The new Editor will officially take office July 1, 1998, and will begin her tenure as Newsletter Editor with the August 1998 issue.

THIS ISSUE OF THE HAPS-EDucator INCLUDES AN ARRAY OF EXCITING AND INFORMATIVE ARTICLES. Judith Spalrin’s “Biography! Genetics! Nursing?” brings a new perspective to anatomy and physiology. As Dr. Spalrin indicates, an element that is missing at far too many of our institutions is collaboration among departments. In using this approach, we teach into a black hole. In effect all that information goes in, but we have no idea where or if it comes out again in any usable form.

Some helpful suggestions have been provided by David Reff and Peggy Goldman in the Teaching Tips column. As usual, articles that appear in this column lead us in a different direction by encouraging us to step out of our routine ways of teaching. I especially liked Dr. Reff’s ideas on helping students improve their pronunciation and spelling of words unique to anatomy and physiology. And, in her article, “Summer Fun: Atom to A.D.A.M.,” Peggy Goldman shows us a fun way to take our students on a tour of anatomy and physiology using a variety of models, software, textbooks and other materials. I suspect that most of our students would begin the semester with higher levels of enthusiasm if they were given such a fascinating overview of the course.

Janice Yoder Smith brings us up to date on osteoporosis in At The Cutting Edge. I found her source of references particularly intriguing—Janice used the Internet to creatively search out information. She also encourages her students to integrate all areas of anatomy and physiology by using case studies such as this one.

Judith Osborn has written a summary of the Update Symposium, “Emerging Infectious Diseases: A Global Problem.” She has done a superb job of reporting on this serious global problem and describing the changes that all countries must make if we are to combat this worldwide menace.

If you are a new member and have not yet attended a HAPS Conference, the symposia are just one of many unique and valuable experiences that await you. So begin plans to attend the next HAPS Conference in Fort Worth, Texas.

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LETTER TO THE EDITOR

The August HAPS EDucator just arrived today, and as usual I enjoyed reading the articles and looking at the photos. Congratulations again for your efforts to produce such a beautiful baby. There’s an error I hope you can correct in the next issue, however. My resignation as editor coincided with being elected President-elect of HAPS in 1992 and was not related in any way to having been selected as coauthor of PAP, which happened at the end of 1989. In fact, by the summer of 1992 most of my work on the 7th edition of Principles of Anatomy and Physiology was already done. So the sentence that starts “When Sandy was invited...” is not accurate. Otherwise, your editorial piece on the past, present, and future was both interesting and informative. Thanks for all you do for HAPS.

Sandy Grabowski
Purdue University
West Lafayette, IN 47907-1392

HAPS-EDucator November 1997 page 1
My friends, this year is certainly turning out to be another exciting year for HAPS! We are smoothing out the wrinkles on the transition to professional association management; we are preparing for the best annual conference ever and several outstanding local conferences; and we are rapidly increasing our services to members.

By now, you should have received our fall mailing. It contains the annual HAPS Membership Directory, which you should find helpful in contacting your friends and colleagues in HAPS. Please check your information for accuracy and if there is a change necessary, please send it to our new address:

Human Anatomy and Physiology Society
222 S. Meramec, Suite 303
St. Louis MO 63105

The above address is also the location of several other professional associations, all under the management of Organization Services Group (OSG). OSG is a group of professional association managers whose full-time occupation is the efficient administration of groups like ours. We were fortunate to find well-regarded professionals to help us with our growing administrative needs who also work with a friendly, down-to-earth style that we have come to cherish in our organization. We were able to retain their services for less than the amount it would have cost us to hire one full-time manager on our own, so we believe that we are using our resources wisely.

In addition to our new address, we have a new phone number. It is (314) 863-3622. We will still be retaining our HAPS Hotline at (800) 448-HAPS and we will soon be transferring it to ring at our new office.

In January, the annual planning meeting of the Board of Directors will take place in St. Louis so that the Directors and the staff of OSG can meet together in our new office. The St. Louis location also provides the central location necessary to make travel expenses as low as possible.

In the interest of conserving our resources as we make a transition in our management activities, we have streamlined our communication methods on the Board of Directors, Steering Committee and within each Committee and other groups. We are having fewer and shorter conference calls and have selected a new, lower-priced type of conference calling service. We have also committed ourselves to using low-cost email, regular mail, fax and regular phone calls when possible.

Your fall mailing also contains a copy of the handy-dandy list of software for human anatomy and physiology that was compiled by the members of our Technology Committee. Martha DePecol Sanner edited this very useful list that many of you have been eagerly awaiting. This list is the fruit of just one of the many ongoing projects that promise to make your membership in the HAPS family even more useful and rewarding. We are also continuing our efforts in studying issues that affect you such as laboratory safety, distance learning, the use of cadavers in undergraduate education, competency testing, assessment and others.

The Membership Committee, under the leadership of Connie Vinton-Schopke, has been very active in organizing our efforts to welcome new members and coordinate the providing of services to current members. She and Martha DePecol Sanner have just recently presented our organization's message and literature to the Annual Conference of the National Association of Biology Teachers. Connie's group is also continuing work on compiling a list of all A and P teachers in North America to provide a database for mailing information regarding our conferences.

The Annual Conference planning is continuing at full steam under the leadership of Theresa Page and we are all looking forward to riding into Fort Worth for a good time of networking, workshopping and roping. There are several wonderful Local Conferences planned around the country as well.

Our new Board of Directors met via telephone for the first time in September, and we welcomed John Martin, our new...
Treasurer, to the Board. We also discussed how business transactions will now take place with the addition of a professional management staff and the recent splitting of the office of Secretary-Treasurer into two offices (Secretary and Treasurer). Basically, all transactions will be handled by the management company under the supervision and permission of the officers. Thus, our Treasurer will sign all checks and deposits, will manage the budget, and will make sure that all expenditures have the proper approval of HAPS. Any committee members or others with check requests will make them to John Martin, who will pass them along to our headquarters. If you have a specific question about your membership status or your payment, contact our headquarters directly. Our Secretary, likewise, will supervise the database and make sure that any use of database information has the proper approval of HAPS. However, day-to-day data entry and corrections will be handled by our headquarters staff. If any of you have any questions about the process, please don’t hesitate to contact our headquarters, our HAPS officers or me.

Also in your fall mailing is a survey that requests your input on various issues related to our organization. We have already received some of these back to our headquarters. Please return yours if you haven’t yet so that we can include your preferences in our planning process.

My first few months as HAPS President have been a whirlwind of change and adventure. I am very happy to be part of such a warm and friendly group of folks who, like me, are excited about what they do and are dedicated to excellence in teaching. Thank you all for your continued support. See y’all in Fort Worth!!

CALL FOR PROPOSALS

HAPS
GRANTS AND SCHOLARSHIPS PROGRAM

Do you have a Human Anatomy and/or Physiology “project” that has been kept on the back-burner because of lack of financial support? Funding may be on its way! The HAPS Grants and Scholarship Committee has extended the application deadline to February 2, 1998. Teachers and students of anatomy and physiology are equally invited to apply. For application forms contact:

Estry Z. Ang
University of Pittsburgh at Greensburg
1150 Mt. Pleasant Rd.
Greensburg, PA. 15601
Email: Estry@vms.cis.pitt.edu
Fax: (412) 836-7129

Having some fun!

HAPS members (shown at right) are enjoying one of many innovative workshops presented at the 1997 HAPS Annual Conference in Toronto, Canada.
ABOUT HAPS MEMBERS

In a summary article published in the Community College Journal (Feb/Mar, 1997), Albert Baccari, Jr. and his community college were asked to participate in an experiment conducted by Philadelphia’s largest newspaper, The Inquirer, to compare the quality of teaching between two institutes: the University of Pennsylvania (UP) and the Montgomery County Community College (MCCC). The Inquirer published a series of articles on education, and the last article in that series highlighted the MCCC and UP experiment and its outcome. One class and one instructor at each institution were selected. Students from MCCC attended UP and vice versa. Surprisingly, or maybe not so surprising to those HAPS members who teach at community colleges, MCCC and Baccari were selected the winners in that comparison. Students listed smaller class size and more personal attention from the instructor at the community college as positive factors that influenced their choice. Discussed in the Community College Journal summary but not in The Inquirer articles were other factors that seriously, albeit indirectly, impact teaching quality at large universities such as the demand for faculty to engage in research, write grant proposals, supervise graduate students and perform other university functions while teaching large undergraduate classes. Congratulations, Albert!

Two HAPS members have been nominated for elected office in the National Association of Biology Teachers. Brian R. Shmaefsky who is Director of Biotechnology Education at Kingwood College in Kingwood, Texas, has been selected to run for Secretary-Treasurer. Margaret (Betsy) G. Ott who teaches at Tyler Junior College in Tyler, Texas, has been nominated for Director at Large. You will have a chance to meet Betsy at HAPS ’98; she is a member of the 1998 Annual Conference Host Committee. Talented people such as Brian and Betsy become stars in whatever they undertake.

Cris Martin, who had just come on board as an assistant editor for the HAPS-Educator, had a serious accident over the summer. Cris apparently suffered a debilitating concussion when her horse fell with her. The latest word is that she is successfully recuperating and has returned to her teaching duties at Stark State College of Technology in Canton, Ohio. Let’s hope that Cris continues to improve and completely recovers very soon.

WANTED!!

HAPS members willing to make at least 50 new friends in six months

by

hosting a one-day

LOCAL CONFERENCE

*** The Local Conference Committee has ***
materials to help you plan and run a conference!

Please contact:
Ann M. Smith
Joliet Junior College
1215 Houbolt Rd.
Joliet, IL 60431
(815) 729-9020 X 2373
TEACHING TIPS

SPELLING AND PRONUNCIATION

Submitted by
David C. Reff
Middle Georgia College
Cochran, Georgia 31014

Doo yoor stoodnits no hou too pronouns and spel thy
anutahnik and fizeolahjik turminahljie? Most of mine do
not. Here are some other gems: foremin, farnicks, larnicks,
cuhrahtoid, meetus, larinicks, viskeral, carahitoid, umpoolla,
aveoili, peristallis, billy vernon, fozzolipids, epifeez,
vestooboolo, utrisill, mahdeeolis, swaller, duodum, lattimis
dorsee. How important is spelling and pronunciation? Com-
pare the following terms: alkeran and alkergoth; alophan and
alphalin; cycloserine and cyclizine; diltiazem and diazepam;
procain and procyan; lanolin and lanexin; trimethaphan and
trimethoprim. These are medications that differ in their
spelling and pronunciation by only a few letters.

When I first began teaching human anatomy and physiol-
ogy in January 1990, my division head told me to take 1/4
point off for each misspelled word. I was too insecure at the
time so I gave my students the benefit of the doubt. With
words of 5 letters or less I required phonetically correct spell-
ing. If the words contained 6 letters or more, the first 6 let-
ters had to be correct. I mulled along with this method for
three years and did not come to appreciate the importance
of spelling until I moved to Georgia. Georgia is ranked 49th
in education with a 33% rate of illiteracy. At the first school
where I taught, lab practicals were multiple choice exams.
(I had no part in this decision; I simply administered the
standardized exam to my lab students.) Spelling was not con-
sidered an important part of a science education in my de-
partment.

In September 1994, I transferred to Middle Georgia College
where I had the freedom to write my own lab practicals, and
that is when I discovered that students who could not pro-
nounce technical terms also could not spell those technical
terms. To help correct the problem, I begin stressing the
importance of spelling and pronunciation weeks before the
first lab practical—I administer three lab practicals during
the semester for my Human Anatomy and Physiology I
course. I also wrote a learning resources manual for this
class and included a section on spelling and pronunciation.
Students are given a small quiz over the material contained
in that section of the manual.

A silent letter or unusual pronunciation can be a problem
for students, especially if it appears at the beginning of a
word they are trying to find in their textbook or medical dic-
tionary. Here are some examples from my manual:
ch is pronounced k as in keys and chromosome
cn is pronounced n as in nut and enemis
es is pronounced eez as in easy and phalanges
eu is pronounced oo as in loose and leukocyte
gn is pronounced n as in nothing and gnathalgia
i at the end of plurals is pronounced eye such as
alveoli
oe and ae are pronounced ee as in see and amoeba
pn is pronounced n as in new and pneumonia
pt is pronounced t as in toe and ptterygoid

Technical words may also contain hard or soft sounds with
which students may be unfamiliar. Here are some examples:
c is pronounced s when it precedes e, i, and y as in
centimeter and cilia
c is pronounced k when it precedes a, o, and u as in
carpal and colon
g is pronounced j when it precedes e and i as in
geriatrics and gingiva
csc is pronounced s when it precedes e, i, and y as in
viscera and sciatic
sc is pronounced sk when it precedes a, o or u as in
scalpel and viscous

Do my students heed my warning and diligently review the
spelling and pronunciation tips? Not! thus they lose 5 to 10%
of their first lab practical grade due to spelling errors. Those
that remain in the class after midterm start asking lots of
questions about how to pronounce the technical words for
the next practical. I am not an expert speller, but I am al-
ways adequately prepared to pronounce and spell the terms
used in class. I keep a dictionary next to the textbook during
lecture and lab, and I have four medical dictionaries (includ-
ing one on CD-ROM) in my office. The spelling errors de-
crease appreciably after the first lab practical. Students who
continue into my Human Anatomy and Physiology II class
invariably have few if any spelling errors during lab prac-
ticals. So what is so important about spelling? Just ask
the families of patients who died from taking the incorrect
medicine because an allied health care provider misspelled
one or more letters on the prescription.

Teaching Tips continued on next page.
PERFORMING EXPERIMENTS WITH HUMAN BLOOD KITS:
A Safer Technique Than Using Student Blood

Submitted by
Theresa W. Page
Texas Woman's University
Denton, Texas 76204-3799

I had almost given up performing blood experiments in my anatomy and physiology courses due to the seemingly insurmountable problems associated with those labs. And yes, I had tried animal blood but was never very pleased with the results. A couple of years ago during a discussion with a colleague who coordinates and teaches immunology labs, I learned that there was a source for human blood that is reasonably safe. If you live in Texas, it is listed in the Texas State Contract Book under testing sera (Class 193). This means that in addition to having a safe source of blood, you get it for a good price. For those of you who do not live in Texas, the companies that handle these human blood kits are:

Murex Biologicals
1107 I-45 South
Conroe, TX 77301
(800) 826-8739

Gamma Biologicals, Inc.
3700 Mangum Rd.
Houston, TX 77092
(800) 326-4262

Immucor, Inc.
3130 Gateway Dr.
P.O. BOX 5625
Norcross, GA 30091-5625
(800) 829-2553

The blood in these kits has been screened and typed. You can get a kit with A1, A2 and B blood cells, or you can buy a kit that contains four blood types: A1, A2, B and O. Apparently the kits are used to calibrate cell counters and automated laboratory equipment. Each vial contains 10 ml which easily provides enough blood to perform hematocrits and blood typing in several classes. Because I use prepared differential blood slides, I have never tried to perform a differential test with this blood, but I suspect that you could do it. Since the purchased blood contains an anti-coagulating chemical, it cannot be used successfully in an Hb meter to measure hemoglobin, nor can it be used for coagulation tests. To keep the students from knowing which blood type they have, we cover the labels on the vials before assigning them. **One note of caution:** I emphasize, for teaching purposes, that the blood is from an unknown source and should therefore be handled with the utmost care and respect. The use of proper safety techniques is strongly stressed and required in all of our labs.

(Note: This article has come to you courtesy of many HAPS colleagues who keep asking for my source of human blood.)

SUMMER FUN: ATOM TO A.D.A.M.©

Submitted by
Peggy Lucie Goldman
137 Eaton Street
Bridgeport, CT 06604

I presented two anatomy and physiology workshops (June, 1997) for the "Discovering Careers in Science and Technology Camp" at the State University of New York College of Agriculture and Technology, in Cobleskill, New York. Ninth through twelfth grade girls attended the camp. Dr. Lynda McMaster-Schuyler had approached me about doing this workshop prior to my attending the 1997 HAPS meeting in Toronto, but the one and a half hour workshops were actually formulated while I was in Toronto and were a direct outcome of interactions with my HAPS colleagues.

I conceived my anatomy and physiology workshop format, learning about anatomy and physiology "From Atom to A.D.A.M.©," while attending Pat Stranahan's "Biology of Cancer" workshop. In my workshop the students were given a choice of over a dozen workstations. The stations included computer-assisted technology and various models. Posters from A.D.A.M.® and transparencies from The Language of Medicine by Chabner were used to decorate the room where the workshops were held.

Live organisms and prostects were not included in my workshop since no preservatives were allowed; it was set up in the computer lab and was not conducive to the use of chemicals or dissection. I did not consider the absence of organisms or prossected specimens a serious omission since attendees were scheduled to do a histology workshop later and would have access to animal tissues at that time.

Attendees rotated through the workstations as follows:

**Workstation 1:** At the DNA model workstation, the students were asked to use a model and diagrams to describe the molecular structure of DNA, a base sequence for DNA and an amino acid sequence for proteins specified by that sequence. A DNA molecular model kit was not available for my group, although I had liked that idea when Pat Stranahan presented it in her workshop.

**Workstation 2:** Computer software, Introductory Activity
in the Human Genome Project and electronic databases compiled by the BSCS, Colorado Springs, Colorado, were placed at this workstation to enable students to compare the results of a manual search of DNA sequence data with the results they obtain using the computer. Included between these first two workstations were current publications from *Time, Nature* and *Newsweek* on the subjects of cloning and the yeast genome.

Workstation 3: At this station, students worked with a macrosopic model of the cell and located the mitochondria, ribosomes, and nucleus. They were asked to sketch a cell. The anatomy of a composite cell from *Essentials of Anatomy and Physiology* by Martin and Bartholomew was bookmarked for them to compare.

Workstation 4: This was the microscopic station and included slides of squamous epithelium and stratified squamous epithelium. They were asked to sketch these. Photographs taken from *Synopsis of Human Anatomy and Physiology* by Van de Graaff, Fox and LaFleur served as resources.

Workstation 5: The next workstation had a model of the heart, and students were asked fundamental anatomy and physiology questions about it.

Workstation 6: The "3-D Anatomy Sampler" from Visible Productions was available for students to use in examining images of the skeleton, heart, bronchial tree and lung.

Workstation 7: A skeleton was placed at this station, and students were asked to locate as many bones as they could using reference materials such as *Human Anatomy* by Martini and Timons; *Understanding The Human Body* by Tate, Seely and Stephens and *A Guide to Anatomy and Physiology* by Rust. Students also had *Human Anatomy and Physiology Study Cards* by Van de Graaff, Johnson and Greek on the skeletal system.

Workstation 8: Students were asked to build the following anatomically correct muscles from clay using the Maniken Muscle® Building Kit supplied by Zoologik System: orbicularis oris, masseter, zygomaticus, supraspinatus, biceps brachii, triceps. *Group Anatomy, Human Anatomy and Anatomy Flash Cards* by Edwards, Maylem and Argetinger were used as references.

Workstation 9: The software for "Bodyworks Classic Edition" was installed here, and students used it to investigate all the major body systems plus health, fitness and living.

Workstation 10: Using A.D.A.M.® Interactive Anatomy software, students were asked to explore its many capabilities and examine various organs and organ systems.

Workstations 11 and 12: At this station were images from the National Institute of Health Collection; these were provided by Dr. Steven Moore (Image Processing in Education, Tucson, Arizona). Students could view representative images of the body such as: neck and chest arteriogram, os teon, hip radiograph, thin skin sections, gyri and sulci and frontal bone scan.

At the remaining stations students were asked to utilize the Internet for sites on women in science and engineering and "Applications for Viewing the Visible Data Set."

The science camp students enjoyed the workshops. While evaluating the success and effectiveness of the workshop, I was reminded of the HAPS Conference where it is impossible to attend all the workshops because you have so much from which to choose. I am especially thankful for all the complimentary materials from publishers and the loans from A.D.A.M.® and Zoologik System. Nancy Niles at SUNY Cobleskill as well as the whole computer team were very, very helpful. I highly recommend teaching Anatomy and Physiology from "Atom to A.D.A.M.®," but if you expect the students to learn all the material, make it a semester project at least!

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**Position Available**

**Anatomy and Physiology**

Heidelberg College, a small liberal arts college in northwestern Ohio, seeks an enthusiastic, student-centered teacher/scholar to fill a tenure-track position in Anatomy and Physiology within the Biology Department. A Doctorate in Physiology or Anatomy is expected; a background working with live animals in physiology lab exercises, and with cats and cadavers in anatomical studies is desirable. Applications will be reviewed beginning November 15, 1997 and should include a cover letter outlining teaching and research goals, a complete vita, graduate transcripts, and three letters of recommendation. Submit materials to Anatomy and Physiology Search, Dept. of Biology, Heidelberg College, 310 East Market St., Tiffin, OH 44883-2462. AA/EOP.
HAPS
Technology Committee Report

Submitted by
Martha DePecol Sanner, CoChair
HAPS Technology Committee
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Here are some ways the HAPS Technology Committee can help you incorporate technology (multimedia and Internet) into your curriculum:

1. Visit our web site - it's at http://www.bio.psu.edu/haps.htm. HAPS members are encouraged to submit short articles for the web site publication. Of particular interest would be articles reviewing web sites of interest to A&P instructors. For more information, contact John Waters, Technology Committee Co-chair and HAPS Webmaster.

2. The Technology Committee has assembled a list of multimedia resources appropriate for undergraduate anatomy and physiology instruction. This list was mailed to you early this fall. Recent updates can be found on the HAPS Website. If you know of software or laserdisks which are not on the list, please forward those to the Technology Committee for inclusion in the list.

3. The Technology Committee provides articles for the HAPS-Educator on Internet and Multimedia that help faculty integrate technology into the curriculum. If you are interested in authoring such an article or writing a software review, please contact Martha DePecol Sanner. The deadlines for the next two issues are December 1 and March 1.

4. The Technology Committee will be sponsoring several workshops at the HAPS Meeting next May in Texas. Please let us know if you have ideas for workshop topics.

5. The following services are available to assist HAPS members with incorporating technology into their courses:
   1. Use of Computer-Assisted Dissection Programs
   2. Use of Interactive Physiology and Histology Programs
   3. Use of Data Acquisition Equipment and Software
   4. Use of Laser Disk Technology
   5. Use of Internet-based/Assisted Learning
   6. Grant Writing for Hardware
   7. Using HTML/VRML to Develop Web Sites
   8. Distance Learning
   9. Powerpoint-style Presentations
   10. Director and other Animation/Authoring Software
   11. Using Anatomy Clip Art
   12. Digitizing Images and Video Frame Captures
   14. Multimedia Setup for Lecture Presentation
   15. Using Word Macros to Create Test Banks.

Please feel free to contact the following HAPS Technology Consultants for assistance: (Listed next to the name of the consultant are numbers that correspond to available technology services and indicate that individual's areas of expertise in reference to those services.)

4, 14. Mohammed Abbas, Schoolcraft College, MI (313) 462-4400 X 5239.
   Email: mabbas@scpo2.lv.schoolcraft.cc.mi.us

2, 4, 9, 10, 11, 12, 14. John Dustman, Indiana University Northwest, (219) 980-7106.
   Email: JDUSTMAN@iunhaw1.iun.indiana.edu

4, 9, 12, 14. Bertha Freeman, Central Florida Community College,(352) 854-2322 (ext 354).
   Email: freemanb@cfcc.cc.fl.us

1, 2, 9. Keith Graham, Lutheran College of Health Professions, IN, (219) 458-2487.
   Email: keith.graham@worldnet.att.net

8. G. Craig Gundy, Weber State University, UT, (801) 626-7076.
   Email: CGUNDY@cc.weber.edu

1, 9. Jeff Hochbaum, Middlesex County College, NJ 08818, 908-548-6000 X3370.
   Email: hochbaum@bellatlantic.net

1, 2. Gail Jenkins, Montgomery College, MD, (301) 650-1425.
   Email: gjenkins@mc.cc.md.us
1, 10, 11. Jamie King, Craven Community College, NC, (919) 638-7330, (919) 638-4232.
   Email: cvking@eastnet.educ.ecu.edu

   Email: lancraftt@email.spjc.cc.fl.us

   Email: Donald_L_Rubbelke@lakeland.cc.oh.us

1, 2, 4, 11, 14. Martha DePecol Sanner, Middlesex Community-Technical College, CT, (860) 343-5780.
   Email: MDSANNER@aol.com

2, 4, 5, 14. Sandy Stewart, Vincennes University, IN, (812) 888-5775.
   Email: ssstewart@vunet.vinu.edu

8, 9, 10, 13, 14. Rich Symmons, California State University Hayward, (510) 885-3420.
   Email: rsymmons@darwin.sci.csuhayward.edu

4, 8, 10, 11, 15. Layne Van Brunt, Forest Park Community College, MO, (314) 644-9322.
   Email: Ivanbrunt@fpmail.stlcc.cc.mo.us

2, 8. Stuart K. Ware, University of Kentucky, (606) 439-3557 x252.
   Email: djmrw@pop.uky.edu

5, 7. John R. Waters, Penn State University, (814) 863-1154.
   Email: jrw8@psu.edu

1, 3, 9. Gordon L. Wells, Ohio Valley College, WV, (304) 485-7384.
   Email: wells@access.mountain.net

1, 2, 4, 14. Xiaobo Yu, Kean College of New Jersey, (908) 527-2471.
   Email: xyu@turbo.kean.edudir

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Osteopetrosis

Submitted by
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Tarrant County Junior College, Northwest
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Osteopetrosis refers to a collection of inherited osteosclerotic disorders observed in humans, mice and some other mammalian species. Several forms of the disorder are known. While the mode of inheritance and specific genetic abnormality varies from one form of osteopetrosis to the next, the underlying defect in all forms of the disorder appears to be deficient osteoclastic function.

Since osteoclasts are involved in the development of osteopetrosis, understanding the normal development of these cells may assist in finding specific causes of this disorder. Osteoclasts are highly specialized cells that develop from more primitive cells, the promonocytes. While specific genes for osteoclastic development have not yet been identified in humans, other research suggests that genetic mechanisms are involved. For example, proper development of osteoclasts appears to depend upon the presence of colony stimulating factor 1 (CSF1). If CSF1 is present and stem cells begin to differentiate, fusion of the resulting intermediate cells ultimately produces mature multi-nucleated osteoclasts.

In mice, a point mutation in the gene for CSF1 prevents osteoclast development. While in another study with mice, disruption of a specific set of transcription factors (bHLH-ZIP) has been shown to prevent the synocytosis required to produce mature osteoclasts. Defects in other genes for transcription factors such as AP-1 result in an absence of osteoclasts in those animals.

If osteoclasts do not function adequately, even though their numbers appear to be within the normal range, then osteopetrosis is the diagnosis. Osteoclast function depends on a variety of factors, and any one of these could influence the development and severity of osteopetrosis. The presence of membrane integrins is one factor that may have a significant role in osteoclast development. Osteoclasts anchor themselves to bone tissue via plasma membrane integrins and form tightly-sealed extracellular compartments within the bone. Mutations in the integrin genes may affect this attachment.

Other factors that influence osteoclast function are regulation of extracellular and intracellular calcium ion levels and formation of extracellular compartments. The ruffled membranes of osteoclasts are specialized to secrete hydrochloric acid into the extracellular compartment. Acid secretion depends on the efficient exchange of bicarbonate for chloride, a shift which is mediated by carbonic anhydrase II. A severe form of human osteopetrosis occurs when carbonic anhydrase II production is inadequate. Another possible abnormality of osteoclasts is linked to vacuole activity and appears to result from an inefficient vacuolar proton pump and loss of vacuolar ATPase production. Acid proteases secreted from the ruffled membranes of osteoclasts digest bone collagen as well as bone matrix. Defects in production of these proteases may also lead to osteopetrosis. Many patients with osteopetrosis display defective superoxide production resulting in poor bone resorption.

While osteopetrosis directly affects only the osteoclasts, normal osteoblastic activity in osteopetrotic individuals may result in marked axial skeleton scleroses which are easily observed on conventional x-rays. These lesions are sometimes called marble bones. In addition, specific forms of osteopetrosis are characterized by distinct clinical presentations which may include neurological, gastrointestinal and hematological.

Both autosomal dominant and autosomal recessive forms of osteopetrosis occur. Albers-Schonberg disease, also known as osteopetrosis tarda or benign osteopetrosis, is an autosomal dominant form of osteopetrosis and is fairly common (6 cases per 100,000). Typically, a diagnosis of Albers-Schonberg is made coincidentally when radiographic studies are made for other reasons. For instance, a CT scan of someone with a suspected head injury might reveal calvarial thickening or the absence of mastoid air cells. X-rays of an individual with a back injury might reveal vertebræ with sclerotic stripes.
reminiscent of those seen on a rugby shirt (rugger jersey vertebrae). Sometimes the diagnosis of osteopetrosis tarda occurs when the mild anemia associated with the partial loss of hemopoietic tissue is being investigated. Occasionally, the diagnosis is made when the patient becomes deaf or blind due to bony encroachment into the internal acoustic canal or the optic foramen. Mild craniofacial disproportion is noted in some patients.

Recent studies reveal that the expression of Albers-Schonberg disease varies considerably and actually reflects the presence of two forms of osteopetrosis. Type I (OPA1) appears to be more common and produces pronounced cranial vault osteosclerosis.Vertebrae and appendicular bones are usually unaffected. The fracture rate and relative mechanical strength of trabecular bone remain normal in OPA1 individuals. These individuals often survive into late adulthood. Type II (OPA2) osteopetrosis tarda is associated with both pelvic endobones and rugger jersey vertebrae and trumpet or flask-shaped expansions of distal epiphyses. Mandibular osteomyelitis and frequent dental caries are also noted in individuals with OPA2. Some patients display syndactyly. The incidence of fractures (particularly transverse fractures) is higher in these individuals. Basal skull osteosclerosis occurs, but the cranial vault appears normal. Patients with OPA2 appear more likely to develop the anemias and infections which frequently result in death by early adulthood.

The autosomal recessive form of osteopetrosis often results in death in early infancy, usually by the second year. This rare (about 1 case per 200,000) disorder is referred to as malignant, precocious or infantile osteopetrosis. Malignant osteopetrosis (OPB1) is characterized by complete obliteration of the medullary cavity and consequent loss of hemopoietic tissue. Diagnosis may be made during the postnatal or even the prenatal period. Prenatal observations may include severe abnormalities in brain development and hydrocephaly as well as in utero fractures and skeletal hyperdensity. The most severe form of malignant osteopetrosis causes prenatal death. Postnatal diagnosis may initially be based on the failure of the child to thrive. Pathological fractures, pancytopenia, and bruising are frequently seen in these infants. Radiographic studies reveal evidence of sclerotic bone, and may also reveal bony entrapments or pressures which cause palsies of cranial nerves II, III, and VII and VIII.

Hepatosplenomegaly is often present in children with malignant osteopetrosis and is caused by extramedullary tissue trying to manufacture sufficient blood cells. In some osteopetrotic children, deficient carbonic anhydrase activity results in renal tubular acidosis. Many afflicted children have depressed serum calcium and phosphate ion levels and elevated levels of serum alkaline phosphatase activity. Some osteopetrotic children develop rickets due to their inability to maintain the proper calcium-phosphorus balance in the blood. Most deaths from malignant osteopetrosis are the direct result of severe anemia, massive infections or hemorrhages that are sequelae to the loss of the marrow tissue.

A milder autosomal recessive form of osteopetrosis is known to exist. Children affected with this form of osteopetrosis display less severe anemia, pancytopenia and hepatosplenomegaly than that observed in the lethal form. But dental caries and other anomalies are frequent. Some prognostimation of the mandible is observed along with diaphyseal sclerosis and cranial hyperostosis. In all other respects, the mild autosomal form of osteopetrosis closely parallels that of OPA2.

Treatments for osteopetrosis focus on ameliorating symptoms of the disorder. Prednisone therapy slows the progression of anemia and limits hepatosplenomegaly. However, prednisone and other glucocorticoids have negative side effects. Prednisone, for example, inhibits growth, lowers the already limited infection fighting ability of osteopetrotic patients and may limit intestinal absorption of calcium by blocking the effects of vitamin D, but it does not reduce bone mass.

Some physicians order a regimen of oral cellulose phosphate and restricted calcium intake to compensate for the inability of the patient to maintain calcium homeostasis. Others report better success in managing the calcium-phosphorus balance of osteopetrotic patients when their diets include liberal amounts of the two minerals. High doses of calcitriol stimulate bone resorption in patients with some remnant osteoclast function, whereas parathyroid hormone infusions have shown only limited benefit.

Recent trials demonstrate that treatments with interferon gamma-1b provide some relief for osteopetrotic patients. Osteoclast numbers remained static, but bone resorption increased in the presence of interferon gamma-1b. While nerve damage was not reversed by the interferon treatment, there was no further loss of vision or hearing while on the regimen. Some patients showed an increase in the optic foramen diameter and medullary cavity space while taking interferon gamma-1b and experienced other side effects such as fever and diarrhea.

At this time, the only known cure for osteopetrosis is a bone marrow transplant (BMT). The prognosis for the patient is better when the BMT is performed before osteopetrosis impacts the sensory nervous system. BMT following myeloablative conditioning has increased the five year survival rate significantly. Future treatments for osteopetrosis may include administration of macrophage colony stimulating factor. In animals this factor stimulated differentiation of osteoclasts and oxidative metabolic activities, and it may become a useful treatment in humans. At present no models have been proposed for gene therapy in this disease.

Osteopetrosis is an intriguing disorder with wide ranging effects on the body. As such, osteopetrosis makes an excel-

(Continued next page)
surveillance increases the likelihood of diseases spreading before containment procedures can be initiated. For instance, in Russia funding was curtailed for preventive inoculations against diphtheria; 50,000 cases occurred in 1995. The disappearance of antidiarrheal medications from stores was the first indication of a recent major outbreak of Cryptosporidium in Milwaukee.

Social upheavals like war, poverty, migration, population growth and urban decay all lead to the spread of disease. Airliners and ships routinely cross borders of numerous countries. Parasites and pathogens, either in the cargo or on the craft itself, are thereby transported to regions having no ecological resistance. Dengue fever and hemorrhagic fever have spread to the Western Hemisphere in this way. Cholera has reemerged as a problem in the Western Hemisphere after a century of absence. Environmental changes, such as deforestation and changing water supplies, as well as floods and droughts, expose populations to previously unknown pathogens. The ‘red tides’ and ‘yellow tides’ caused by dinoflagellates have increased dramatically. Poverty-stricken individuals may eat the contaminated fish and become ill from the ingested toxin or with cholera organisms carried on the dinoflagellate’s surface. These problems may be exacerbated by overfishing, climate changes and pollution.

Global warming may increase the transmission of vector borne diseases as insects spread to previously uninhabitable areas. Malaria has spread to higher altitudes in Tanzania due to changes in weather patterns. Similar increases occurred in Rwanda and Honduras with global warming.

Immunization is the most cost effective solution for eradicating disease. Smallpox became the first disease to be eradicated through the implementation of an aggressive immunization program. Vaccines have eliminated polio from the Western Hemisphere and measles may be next. The cost of 1.2 billion doses of vaccines which would protect against 6 major diseases (including polio, measles, tetanus, yellow fever, and hepatitis B) is $82 million (the cost of two F18 fighter jets). The World Health Organization program to expand immunization globally costs $1.5 billion (the cost of three Stealth bombers).

In 1988, Joshua Lederberg commented that we have the illusion that we can govern microbes, but they are in fact our competitors. Enhanced surveillance, applied research and increased focus of the health care infrastructure on preventing and controlling these diseases may provide the solution to this problem. In addition we must begin to think globally and we must come to accept that we live in an international culture. The microbes, with their high reproductive rates and rapid adaptation, will again threaten the human population unless preventative measures are implemented.

Judith A. Osborn
Community College at St. Mary’s
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Membership Form and Interest Survey
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222 South Meramec, Suite 303
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Please check (✓) if you are interested in or have experience in any of these areas:

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Product Review: Pocket Point® Remote Control Pointer

As instructors, we cannot ignore the impact that technology is having on all aspects of teaching. Just keeping up with the latest available speed of CD ROM drives is becoming difficult! Is 16x fast enough, or should I wait another month? Is a 200MHz Pentium going to be as fast as I will need in a year or two? (Correct answer: NO!). Such are the ways of an increasingly technological world. While there is much useful software available, the hardware side of things is a bit more daunting. One publication that I receive, the Computer Shopper, appears monthly and is well over an inch thick. Because it is filled primarily with advertisements for hardware products, trying to find what you need can sometimes be overwhelming.

Enroute to the HAPS meeting, I came across a product advertised in an airline magazine that attracted my interest. It is a small hand held device for use in presenting lecture material. Called the Pocket Point®, the device is a little larger than a credit card and combines two functions that I have been searching for—a laser pointer and a remote control for advancing slides.

When I present material in class I use two screens. One screen, controlled by my portable computer, is used to present word-based information that is primarily in the form of bullet charts or diagrams. This screen guides students through the material and keeps them on track with regard to the overall structure of the presentation. The second screen is used for projecting graphic images from overhead transparencies and provides the visual component of the presentation. I spend most of my time at the visual overhead station drawing attention to key components depicted in the transparency and marking it as needed with an erasable pen. During this operation, I am usually about 40 feet from my portable computer. Moving to the next slide in the presentation requires that I walk the 40 or so feet to my computer. Two years ago, I bought a radio-controlled mouse for about $100 which I thought would remedy the problem but found that it had a working distance of only 10 feet.

With Pocket Point® I now have a unit for about the same money as the radio-controlled mouse ($100) that will transmit up to 50 feet from the computer. In addition, it has a bright laser beam (5mW) pointer. I can control the computer from a considerable distance, plus I can conveniently indicate details on the transparency screen with my new laser pointer. Such is the story of new hardware technology—same price, but more features.

PocketPoint® has a small plug-in module that detects an infrared beam transmitted from the hand held unit, or it can interact directly through an infrared port if available. The unit has four buttons: a slide advance, a slide reverse, a laser beam control and a button that can be used to produce any number of special effects. These special effects include a countdown timer (useful for timing a lecture break, discussion period and so forth), a title screen (any pcx or bmp graphics image), a scrolling ticker-tape message, a sound passage (e.g., midi or .wav file), a video file (any avi file, which only works with Windows 95 or NT), or you can launch another program. I find that four buttons are all I need. In the past I have used more complex devices with numerous buttons only to find that many functions went unused.

Should you need to work at two overhead projection stations at once, which I recommend highly by the way, the Pocket Point® is the best solution I have found. From the standpoint of effectiveness, the two screen approach has a lot to offer. My students can purchase copies of my computer slides in advance. With those notes plus printouts of my bullet charts and the transparencies from the text, they can easily follow the class discussions. Using this method, I have observed that students take fewer notes, and in my opinion, spend more time listening to the lecture, more time thinking about the material and less time writing. Instead of questions such as: "What did you say . . . ?" which is

(Continued next page)
asked in an attempt to write down every word that I say, students now ask questions based more on clarification of concepts and a desire to understand the material. Students compliment me by asking, "Why don't other instructors do this?" I shrug my shoulders as I struggle to find a satisfying answer to that question.

Pocket Point® is compatible with PowerPoint®, WordPerfect®, Harvard Graphics® for Windows® and most presentation software that utilizes the arrow keys or buttons to navigate forward or backward. It can be used with Windows® 3.x, Windows® 95 or Windows® NT on a 486 or faster processor that has at least 8Mb RAM, 4Mb disk space available, a 256-color display and a IrDA port or at least one available serial port. Pocket Point is available through the following distributor for $99.95:

Mind Path Technologies
12700 Park Central Drive, Suite 400
Dallas, TX 75251
1-800-449-1799
E-mail: info@mindpath.com
Web: www.mindpath.com

Pocket Point® has become, along with my portable computer, my most valuable classroom equipment. Even if you only use it as a laser pointer, you can't go wrong with a purchase price of only $100 or so.

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LOCAL
HAPS CONFERENCE

Baker College of Flint
Flint, Michigan

Saturday, March 21, 1998

TENTATIVE SCHEDULE:

7:30-9:00 Registration
$30 members
$35 non-members
Exhibitors: 8:00-4:00
9:00 Welcome
9:30-12:00 Update Speakers
12:00 Lunch
1:00-4:30 Afternoon Sessions: Workshops

For more information, contact:
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Health & Human Service
1050 West Bristol Road
Flint, Michigan 48507
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Fax: (810) 766-4049
Email: lupini_l@acadfl.baker.edu

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Who cares about the fire! Just let me go back to sleep.

Seen here are HAPS members (l. to r.) Maureen McCleary, Caryl Tickner, Christine Martin and Donna Rowell. One of the more memorable experiences at the Toronto Conference was being awakened at 2:00 am to the sound of fire alarms and flashing lights. It turned out to be a false alarm, but most hotel guests, including HAPS members, made the trek down numerous flights of stairs and then filed outside the hotel to wait until the all clear signal was given.
Many of us have seen basic science courses such as biology I, cell biology, chemistry and microbiology eliminated from nursing programs, and it is good to know that the trend may be reversing! I spent an exciting twelve days with nursing faculty, genetic counselors, physicians and researchers from all over the country who stressed the importance of genetics in the traditional as well as the new roles of the RN, BSN and MSN prepared nurses. Leaders in the nursing profession, since they are caregivers, counselors, advocates and educators, have come to realize that they need to understand the genetics behind congenital disorders, late-onset genetic diseases and the highly-publicized predisposing factors. Today, all of these are of concern to everyone, not just the pregnant couple and caregivers in neo-natal units.

"Exploring the Impact of Human Genetics in Nursing Education: A Summer Institute" was held June 16-27, 1997, and is Part I of a 3-year endeavor being sponsored by the Children's Hospital Medical Center of Cincinnati and the University of Cincinnati College of Nursing and Health. The prestigious "Summer Institute" is under the direction of Cynthia A. Prows, MSN, RN and funded by the National Institutes for Health (NIH) under the Ethical, Legal, Social Implications (ELSI) Research Program of the National Center for Human Genome Research. The two weeks of the "Summer Institute" were intense and packed with speakers, workshops, discussions and evaluations that dealt with topics such as genetic principles and research; ethical, legal and social issues; counseling techniques; informatics research and genetic nursing applications. The final and perhaps overall goal of the "Summer Institute" was to develop a written plan with strategies for integrating genetics into existing nursing program curriculum.

Although only two biologists attended the "Summer Institute," it became very clear early on that biology educators would have a major role in this integration. Most biologists would readily propose a three credit genetics course for all nursing students, but the reality of faculty loads, a shortage of resources and jam-packed curricula prohibit the implementation of this easy answer at most institutions. Instead, an in depth analysis of existing programs is the first step being called for by a majority of the "Summer Institute" participants. As biologists our role will be to address questions such as, "How much genetics is being taught in courses like anatomy and physiology, cell biology and pathophysiology? Do nursing faculty expect their students to have a good genetics foundation? What kind of genetics information is needed by nurses?"

In an ongoing effort to keep our biology classes current, we need to communicate with the nursing faculty at our institutions. Perhaps we should volunteer to serve as guest speakers in nursing classes where the relevancy of genetics could be discussed. In addition we should find new and innovative methods for incorporating more genetics into our biology classes. Basic genetic principles, examples of genetic diseases or exciting genetic research could be added to most topics in anatomy and physiology.

Genetics has become a hot topic in the popular press. As such, it is raising the level of understanding in the lay public as well as elevating the level of questions being presented to nurses. As biologists, we have an important role in preparing students for their nursing classes and their nursing careers. We should actively participate in the process of integrating genetics into nursing classes, and we should promote the understanding of genetics by future nurses.

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Upgrade on Using Virtual Microscope

For those who are using Virtual Microscope, a computerized histology program developed at Delaware County Community College (DCCC), there is now an easier way to access the program. You can get to the DCCC Home Page at this address:

http://www.DCCC.edu

Once you are linked, click on the following buttons: Computer Courses followed by On Line Courses and Virtual Microscope.

Send any comments or questions to:
Barbara J. Cohen
Delaware County Community College  
Medic, PA 19063-1094
Email: bcohen@dcccnet.dccc.edu
Phone: (610) 359-5243

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WALK IT THROUGH DIAGRAMS

Presented by
Nancy Kincaid & Susan Baxley
Troy State University in Montgomery
Montgomery, AL 36195-4419

These energetic and entertaining presenters began their workshop with a brief discussion of the learning process and different factors that instructors may consider in maximizing a student's capacity to absorb and use information. The discussion included issues relating to the importance of different learning environments for different individuals. Does an individual learn most effectively in a straight lecture environment, or is an active approach more appropriate? For example, reading, eating or listening to music may be a vital part of the learning environment for some students. Individual students also have different perceptual strengths; some absorb information more readily in a visual format, some rely more heavily on auditory cues, while others require a physical involvement in the learning process. It was this kinesthetic learning style that the workshop addressed.

Several specific examples of exercises used to demonstrate physiological processes were presented and participants were invited to "walk through" the demonstrations. The first exercise illustrated circulatory patterns. Using vinyl tablecloths marked with maps of vessels and heart chambers, we traced the fetal and adult circulatory paths by walking them on the maps. Additional information was conveyed by having participants carry plastic eggs of varying colors to represent red blood cells, oxygen and carbon dioxide. Learning of the circulatory paths can be reinforced giving each student a card containing the name of a circulatory structure such as a blood vessel, heart valve or a fetal structure. Students are then asked to line up in the proper order, using these cards, to describe a circulatory path.

They also described a similar method for demonstrating the digestive system based on a 1996 HAPS Workshop, "Using Improvisation to Teach Anatomy and Physiology," by Carolyn Yucha. Each subject in the line represents a digestive organ and "performs" the task of that organ during digestion. For example, using a cookie, the "mouth" crumbles the cookie to mimic mastication, the "stomach" pours gastric juice over the food, and the "large intestine" pours the mixture into a colander and strains out the water to indicate water absorption.

Exercises were also presented that illustrated normal nephron function and changes in renal function in diseases such as diabetes. A map drawn on vinyl illustrated the parts of the nephron, the renal blood vessels, the renal pelvis, ureters and urinary bladder. The map included pores in Bowman's capsule and the glomerulus and styrofoam balls of various sizes to mimic molecules that are filtered at the glomerulus and others that are excluded. The loss of glucose in the urine in a diabetic can be illustrated by the addition of "boats" that carry glucose. Because of the large amount of glucose that appears in the glomerular filtrate, the "boats" become full (saturated) and glucose remains inside the renal tubule.

The workshop was engaging and included many suggestions from enthusiastic participants. Regardless of the learning style of an individual student, these exercises would be a great way to reinforce anatomical and physiological concepts.

Reported by
Virginia McDonald
St. Louis Community College
St. Louis, Mo. 63122
HAPS COMMITTEES AND BOARDS

Have you wondered where you could obtain a standardized anatomy and physiology test? Or maybe you are thinking about an educational project and are looking for funding? Do you feel strongly about a particular issue and would appreciate an opportunity to discuss it with other HAPS members? The following committee chairs invite input from HAPS members and willingly provide information on the activities of their committees.

ANIMAL USE COMMITTEE
Pip Merrick, Co-Chair
University of North Carolina
CB #3280/Coker Hall
Chapel Hill, NC 27599
Phone: (919) 732-1070

Craig Clifford, Co-Chair
Northeastern State University
611 N. Grand Avenue
Tahlequah, OK 74464
Email: clifford@cherokee.nsou.edu
Phone: (918) 456-5511 X 3827
Fax: (918) 458-2325

A three-year plan includes distributing the HAPS policy statement, developing animal use internet links on the HAPS Home Page, addressing laboratory safety issues, monitoring relevant legislation, developing a dialogue with specimen suppliers and creating a resource packet for HAPS members. Suggestions and questions from members are welcome.

COMPETENCY TESTING COMMITTEE
John Dustman, Chair
Indiana University N.W. Department of Biology
3400 Broadway Gary, IN 46408
Email: jdustman@iuinhwl.iu.indiana.edu
Phone: (219) 980-7106

This committee recently completed and tested an approved HAPS Standardized Test for Human Anatomy and Physiology. Any HAPS member may obtain a copy of the test by writing to the Chair.

CORE CURRICULUM AND ASSESSMENT COMMITTEE
Ronald Carlin, Chair
Fairleigh Dickinson University
285 Madison Ave.
Madison, NJ 07940
Phone: (201) 593-8748

This committee has developed a second, revised edition of the HAPS "Human Anatomy and Physiology Course Guidelines." The second edition includes new guidelines relating specifically to the laboratory component of the course.

EDITORSIAL ADVISORY BOARD
Colleen Nolan, Interim Chair
St. Mary's University
One Camino Santa Maria
San Antonio, TX 78228
Email: biocolnol@stmarytx.edu
Phone: (210) 436-3241
Fax: (210) 431-6746

Members of the Editorial Advisory Board provide advisory and support services to the HAPS Editor such as writing articles and proofreading the final draft of the HAPS-Educator before it goes to press.

GRANTS AND SCHOLARSHIPS COMMITTEE
Estrella Ang, Chair of Review Subcomm.
University of Pittsburgh at Greensburg
1150 Mt. Pleasant Road
Greensburg, PA 15601
Email: estry@vms.cis.pitt.edu
Phone: (412) 836-9693
Fax: (412) 836-7129

The Grants and Scholarships Committee is responsible for reviewing all grant and scholarship proposals, selecting proposals to receive funding, and submitting its recommendations to the Board of Directors for approval. Completed grant and scholarship applications are due December 31, 1997.

MEMBERSHIP COMMITTEE
Connie Vinton-Schoepske, Chair
Hawkeye Community College
Department of Arts and Sciences
P.O. BOX 8015
Waterloo, IA 50704
Email: mrs@forbin.com
Phone: (319) 296-2874

Committee members assist the Chair with recruiting members and compiling membership information.

NOMINATING COMMITTEE
Steven Trautwein
Southeast Missouri State University
One University Place
Cape Girardeau, MO 63701-4799
Email: c338scb@sevomsmu.edu
Phone: (573) 651-2362
Fax: (573) 651-2322

The committee chair is always the current President-Elect. The responsibility of the committee is to recruit nominees for the elected offices and appointed positions of the HAPS organization.

LOCAL CONFERENCE COMMITTEE
Ann Smith, Chair
Joliet Junior College
1216 Humboldt Rd.
Joliet, IL 60436
Phone: (815)729-9020 X2373
Fax: (815) 773-6670

The committee provides mentoring assistance to coordinators of local conferences. Anyone interested in hosting a local conference should contact the Chair.

ANNUAL CONFERENCE COMMITTEE
Shirley Mulcahy, Chair
San Diego Mesa College
Biology Department
7250 Mesa College Drive
San Diego, CA 92111
Email: smulcahy@intergate.sdmesa.sdcdd.cc.ca.us
Phone: (619) 627-2787 Fax: (619) 297-5668

Development of a standardized fees structure for the annual conference, formulation of guidelines and assistance for the conference coordinator and generation of a calendar of conference sites are the primary responsibilities of the committee.

TECHNOLOGY COMMITTEE
Martha DePecol Sanner, Co-Chair
Middlesex Community-Technical College
100 Training Hill Road
Middletown, CT 06457
Email: MDSANNER@aol.com
Phone: (860) 343-5780

John Waters, Co-Chair (Internet-related Issues)
208 Mueller Laboratory
Department of Biology
Penn State University
University Park, PA 16802-5301
814-863-1154
JRW8@psu.edu

The committee monitors and reports on technological changes influencing anatomy and physiology teaching such as advances in instructional software and data acquisition equipment.
EXHIBITORS
1997 HAPS ANNUAL CONFERENCE
TORONTO, CANADA

The Human Anatomy and Physiology Society wishes to express its appreciation for the support provided by these exhibitors:

A.D.A.M. Software Inc.
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(301) 571-0672

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