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HAPS Conference
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UPDATE SYMPOSIA
- "Cardiovascular Aging," by Gary Gerstenblith, M.D.
- "Advances in Plastic Surgery," by Craig Vander Kolk, M.D.
- Other update symposia will include a presentation by Ferid Murad, 1998 Nobel Laureate (sponsored by the American Physiological Society).

KEYNOTE SPEAKER
"The Place of Acupuncture and Other Forms of Complementary Medicine in Western Medical Practice." Brian M. Berman, M.D., Associate Professor of Medicine and Director of the Complementary Medicine Program at the University of Maryland School of Medicine.

ADDITIONAL HIGHLIGHTS
- Welcome Reception
- First-Timers Breakfast
- Poster Sessions
- Exhibit Hall (Visit Vendors)
- Two Full Days of Workshops at Towson University
- Seafood Fest
- Washington D.C. Tour

Look for additional details upon receipt of your Registration Packet and in the May HAPS EDucator.

Host:
Towson University
Towson, Md. 21252

Conference Site:
Hunt Valley Marriott Inn
in the heart of
Maryland's Hunt Country
Rates: $92 single & double
1-800-228-9290

Travel:
Baltimore-Washington Airport
By auto-located off I-83N
Suburban shuttle service available

For more info. contact:
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Towson University
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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.hapsweb.org/

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(s) must be related to the teaching of anatomy and physiology. The HAPS-EDucator Editor and Editorial Board jointly determine whether an advertisement meets the criteria of HAPS. 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 appear in this publication do not necessarily represent the opinions of HAPS. Advertisement of a product in the HAPS-EDucator does not represent endorsement of that product by HAPS. Contact the Editor for information on advertising rates, advertisement size and the procedure 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).
It is Monday, January 11, and I have just returned from the midwinter meeting of the HAPS Board of Directors and Committee Chairs in St. Louis. The snow and ice in the midwest and east made travel treacherous but almost all participants made it to the meeting (although I was a late arrival due to icy roads in southeast Missouri!). We met from 8-5 on Saturday, with a break for lunch, then reconvened from 8:45 until noon on Sunday. During part of the scheduled meeting time, the Committee Chairs met separately from the Board, while other times the Board and Chairs met together. This very productive weekend reinforced how important it is for the Board and Chairs to meet periodically. We are working on ways to increase this communication in the future.

Although Past President Kevin Patton will be reporting on what was covered at the meeting, there are two items that I want to report to you in this column. First, the Board of Directors has come to the conclusion that HAPS needs to be able to count on a larger income in order to continue to provide the services that its members receive. Therefore, at the annual business meeting in Baltimore, we will be asking the membership to approve an increase in annual dues from $30 to $50; there will be a corresponding increase in exhibitor table charges at annual meetings from $100 to $175. If approved, both changes will become effective July 1, 1999.

The Board feels that this increase is necessary to insure the support of all of the activities of HAPS that add to our expenses. In addition to the work of the Board of Directors, HAPS now has thirteen active committees, most of which have been appointed in response to requests for specific services from HAPS members. For example, in the Spring HAPS ballot mailing that all 1200+ HAPS members receive, there will be an updated 19-page list of Software for Anatomy and Physiology, courtesy of Martha DePecol Sanner's Technology Committee. Over 150 instructional software products are described in this document. (Until you receive a hard copy, you can preview this document, complete with links to manufacturers, at HAPS' Web Page found at www.hapsweb.org.) As you can imagine, the cost of printing and mailing this valuable document will be considerable.

Other benefits derived from HAPS membership include your subscription to the HAPS Educator, discounted fees to annual and regional conferences, eligibility for grants, access to the HAPS Competency Examination and Core Curriculum (see related article on page 13), access to HAPS Position Papers; and access to the HAPS Website. Future additions to this list of benefits will include reviews of software, proceedings of the annual meetings, additional position papers, and an anticipated increase in the number of regional conferences. The HAPS Board does not take the increase in dues membership lightly but with the conviction that HAPS members understand that the increase in the quality and quantity of benefits associated with membership in HAPS, coupled with requirements of fiscal responsibility, inevitably lead to a need to increase our revenue.

Secondly, it has become apparent that a primary mechanism that HAPS can utilize to increase services to the membership is by having more regional conferences. This was strikingly brought to my attention because I am in the process of surveying, on a quarterly basis, all former HAPS members who did not renew their membership in that quarter. The information received from those who responded is loud and clear: the single most important way in which these former members could have been persuaded to maintain their memberships was for them to have had access to the information and networking possibilities that occur at national and regional meetings. Many of our members, by virtue of circumstances of geography, school calendar, teaching load, or whatever, are not able to attend the annual national meetings. The short conferences occurring locally are the only opportunity for many of these members to meet with colleagues and hear first-rate up-to-date seminars and workshops. The Regional Conference Committee, chaired in the past by Ann Smith and Pat Harker, and currently by Lisa Lupini, has done an extremely good job of helping people to organize short conferences. However, this committee was never provided with a mechanism for recruiting individuals who would be willing to be conference organizers; consequently, we have historically had only a few regional conferences each year. That is where the Board of Directors is becoming involved. Effective January 9, 1999, each of the Regional Directors became an ex officio member of the Regional Conference Committee. The Regional Directors are specifically charged with identifying and recruiting individuals from their regions who would be willing to host a short conference. We feel that this recruiting function is more easily and effectively done by Board members because of the greater likelihood of their collectively being able to identify such individuals. I want to make clear that this is intended to help the Regional Conference Committee and does not reflect unfavorably on its past performance, which was focused on assisting those members who volunteered to host a short conference.

Our goal is to have at least one short conference in each of the four geographic regions of HAPS every year. If you are asked by a member of the Board to organize a short conference, please seriously consider it. Better yet, don't wait to be asked! Let me know that you are interested, and I will put you in touch with a lot of helpful people. Organizing a regional conference has become much easier since the details of registration and administration are being handled by our business office. As an organizer of a short conference in 1993, I can truthfully tell you that the hard work was more than worth it - all of the participants were excited, they appreciated the opportunities to meet with colleagues and exhibitors, and they learned a lot of new and valuable information to take back to their classes. As the advertisement in past HAPS Educators states, "It's a great way to make fifty new friends!"
The Effect of Medical Vocabulary Courses on Student Success Rates in Basic Anatomy/Physiology

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It has been long evident that some students are more comfortable than others with the complexities of anatomical language found in Anatomy and Physiology (A&P) classes. Students who have been exposed to medical terminology prior to their A&P course will have a distinct advantage over those who have not had this exposure. Help is available for the vocabulary-disadvantaged students in the form of a Medical Vocabulary course.

Medical Vocabulary classes are able to conduct a study that is impossible to implement fully in the A&P class; words can be studied in coherent groups as a language instead of where they happen to occur in an A&P course. The use of prefixes, suffixes, and word roots is stressed in basic A&P courses, but there is insufficient time for the in-depth conceptual development afforded by a Medical Vocabulary course.

The relationship of Medical Vocabulary to A&P is analogous to the relationship between arithmetic and higher mathematics; students who cannot read numbers will probably not meet with great success in higher-level courses.

A presumption of the effect of one course on another is insufficient grounds to determine whether or not to require it as a prerequisite for the other. Hard data should be gathered to determine whether such a move would be worthwhile.

I recently examined the records of all students to whom I had taught BIO 112 (Basic Anatomy and Physiology) from the spring of 1993 through the fall of 1997 to determine who had completed AHS 104 (Medical Vocabulary) before entering the BIO 112 course and whether that completion affected their success in BIO 112. The data obtained from that search follows. The data reported below indicate that there is a strong correlation between the previous study of Medical Vocabulary (AHS 104) and the later success in BIO 112. This work grew out of a recent conversation with Ms. Ann Coley, the chair of our Allied Health program, who was also concerned about the effect of AHS 104 on student success in BIO 112 and the Nursing program in general.

Several of the results of the study were so striking that a rigorous statistical treatment was not considered necessary, but later extensions of the search into the general effects of AHS 104 on the entire health careers program will be more rigorous.

Much of the data were gathered through the use of our College’s Student Information System (SIS) network. It provided a ready source of transcript data that we could examine to answer our questions. The results of the SIS search revealed a total of 185 students who had completed BIO 112 and 44 additional students who had withdrawn or had been dropped for poor attendance. The total sample included 229 students.

In addition to AHS 104, completion of some other science courses might contribute to a student’s grasp of anatomical terminology. Such courses would include other Medical Vocabulary courses, preparatory anatomy courses taken previously, and possibly other biology courses. Students who had completed AHS 104 or other related courses were placed together as a “prep” group, while those with no supporting courses were classified as “non-prep.”

Through examining transcript data it was clear that a preparatory course in biology (BIO 100) had no significant effect on a student’s later success in BIO 112. Only four stu-
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dents were found who had taken BIO 100, and their BIO 112 grades consisted of 3 C's and one F. It was clear that these students ranked with those in the "non-prep" group. Because BIO 100 deals with all of biology, it does not deliver enough specific A&P information to serve as a prerequisite for BIO 112. Other even more basic A&P courses did provide some aid to success in BIO 112.

Grade Distribution of Students Completing BIO 112 (Figure 1)

Of the 185 students completing BIO 112, the overall grade average for "prep" students who had completed Medical Vocabulary was 81% while those who had completed other anatomy courses was 78%. "Non-prep" students had an average of 75%.

The grade distribution of prep and non-prep students is shown in Figure 1. Of the students taking BIO112 for the first time, the 70 who studied Medical Vocabulary (MedVoc) had over twice as many A's (28.6%) as those 110 students who had not taken the Medical Vocabulary course (11.8% A's).

The five students who had taken some other anatomy course showed an even greater number of A's, an expected result because they would have had the advantage of both vocabulary and conceptual training. The number of A's and C's were equal in this group, but none failed.

Students who had completed Medical Vocabulary showed only a 5.7% failure rate while non-prep students had a 24.5% failure rate - almost five times the rate of those who had taken the vocabulary course. Ratios obtained when the five students with other anatomy courses were combined with the medical vocabulary course were not significantly different, and the two groups were combined for later comparisons (Figures 2 and 3).

Only 7.1% of the prep students needed to repeat BIO 112, but 13.6% of the non-prep group repeated the course.

Attendance Drops (FA) and Withdrawals (W) (Figure 2)

Attendance Drops: The grade of FA is given to students who cease attending but do not obtain an official withdrawal. Of 25 attendance F's recorded in BIO 112 (A&P), 20% enrolled in AHS 104, but only 4% passed; 12% withdrew and 4% failed the AHS 104 course. Overall, 96% of attendance F's did not receive the benefit of completing AHS 104.

Withdrawals: Withdrawals can occur for many reasons, but of 19 withdrawals from BIO 112 since the spring of 1993, only 32% had enrolled in AHS 104. Only 15.7% passed the course; 84.3% either did not take the course, withdrew, or failed. Overall, 84.3% of withdrawals from BIO 112 lacked AHS 104 or other basic anatomy courses.

From the graphs in Figures 1 and 2, which account for 229 students over the past four years, it is obvious that those who successfully completed AHS 104 or another anatomy course made substantially more A's, B's, and C's in BIO 112 than did those who had not taken a preparatory course.

The most noticeable difference in passing grades was the attainment of almost four times the proportion of A's by prep students as those attained by non-prep students. The majority of those students used AHS 104 as a prep course for BIO 112.

Students who did not finish AHS 104 or other prep courses showed fewer high grades and the total failure rate was over six times higher than in the group who finished a proper preparatory course.

The percentage of withdrawals (W) was higher in the unprepared group than in those with prep courses. That difference was surprising because W usually covers student/spouse transfer, illness, and other non-academic circumstances.

Academic Progress (Figure 3)

One could assume that the difference in grades might lie in the fact that the students who took AHS 104 were simply the "smarter" students who have greater academic ability. That assumption was tested by examining cumulative grade-point ratios (GPR) in the semester in which each of the students took BIO 112.

As shown by Figure 3, the average cumulative GPR of the prep students is higher overall than the average GPR of students who did not take AHS 104 or other prep courses (non-preps). That difference becomes smaller when one examines the average GPR for each letter-grade group in BIO 112.

The cumulative GPR's for each grade are so close in BIO 112 that it would seem that the ratio of grades between prep and non-prep groups must be due to the prep courses. The higher overall (ALL) cumulative GPR's of the prep group may reflect higher grades in all health science courses after completion of AHS 104. A widened investigation to examine that possibility will be undertaken soon.

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Students of nearly equal overall academic accomplishment are present at similar BIO 112 grade levels in both groups, but the prepared group has a higher proportion of BIO 112 passing grades and a lower proportion of failures.

There seems to be a small trend for prep students to receive an A or B in BIO 112 even if their overall accomplishments are lower than some non-prep students. The small sample size of prep students who received F’s results in an inability to compare GPR’s in any significant manner. Results were mixed at the C level.

Conclusion

Based on a sample of 229 students, passing Basic Anatomy was possible without a course in medical vocabulary, but higher grades were obtained by the prep group. Higher failure and dropout rates were found among the non-prep group, despite roughly similar overall academic accomplishments by the two groups. The use of a medical vocabulary course as a prerequisite for courses in anatomy and physiology is highly recommended.

Physiology Insights Fellowships Available

Physiology Insights is a program sponsored by the American Physiological Society (APS). The program provides faculty who do not have advanced degrees and who are teaching at two- and four-year colleges (especially community colleges) the opportunity to spend 7-9 weeks working full-time conducting research in physiology research laboratories. In addition, the Insights Fellows will be provided the opportunity to participate in other professional activities at the host institution, including seminars, journal clubs, etc. The Insights program allows faculty the ability to increase content knowledge and understanding of the scientific research method and to expand teaching techniques. An integral part of this program is working with other Insights Fellows and APS teaching specialists in order to brainstorm new ideas for the classroom. Through such interactions, the participant’s knowledge can be transferred to the classroom through development of inquiry-based classroom activities. There are also opportunities to present the developed activities at a professional meeting (NABT or HAPS) and/or to publish the classroom activity through the National Association of Biology Teachers (NABT) as a monograph and/or on-line publication.

An integral part of the Insights Program is attendance at a Spring Retreat in conjunction with the annual meeting of HAPS (May 22-28, 1999) in Baltimore, Maryland. The Retreat/HAPS meeting is a required component of the program, so applicants need to ensure that they have no conflicts prior to submitting applications.

Included in the fellowship are the following stipends/grants:

• $400 per week stipend for each week of full-time participation in the research laboratory (up to a maximum of $3600)
• $200 stipend to attend the Spring Retreat/HAPS Annual meeting in Baltimore, Maryland. Housing and per diem will also be paid for the Retreat. The participant may be responsible for air/ground transportation to the Retreat. Additional funding is being sought to cover transportation, but participants should bring ready to pay for their fare and/or ground transportation

• $200 stipend for the submission of an appropriate classroom activity for publication
• $300 mini-grant for materials/resources to use in development of field testing of the classroom activity.

Application forms and further information are available at http://www.faseb.org/aps/educatn/insinfo.htm

The deadline for applications has been extended to March 30, 1999. If you have any questions or need assistance in locating a research host, contact Marsha Matyas (Education Officer, American Physiological Society) at the following address: 9640 Rockville Pike, Bethesda, MD 20814-3991, (301) 530-7132, (301) 571-8305 (fax), mmatyas@aps.faseb.org
Exercise and the Immune System

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Common lore holds that being “in shape” helps prevent infection, while being “out of shape” increases susceptibility to common ailments. The relationship of exercise and its effects on the immune system has been intensively studied for a decade. Exercise has been shown either to increase or decrease the risk of illness depending on the intensity of the exercise. Research has focused on several main areas of study: 1) the relationship between exercise intensity and incidence of upper respiratory tract infections (URTI); 2) the acute effects of exercise training on various immune cell numbers and activity; and 3) the long-term improvement in immune function with moderate exercise.

Exercise Intensity and the Incidence of Upper Respiratory Tract Infections (URTI)

Several studies have documented that as exercise intensity increases there is a corresponding increased risk of acquiring URTI (Niemann, 1997; Mackinnon, 1997). Athletes who compete in high intensity events have a significantly greater risk of developing URTI. One study investigating runners in the Los Angeles Marathon found that 12.9% of the runners became sick within two weeks of the race compared to 2.2% of similarly experienced runners who did not compete. A correlation between mileage and risk of infections was found. Runners who trained 60 or more miles per week suffered twice as many URTIs as those who trained less than 20 miles per week. Others (Heath et al., 1991) have concluded that running more than 485 miles per year is a significant risk factor for developing URTIs.

The frequency of URTI symptoms appears to be inversely related to the time taken to complete the race (Niemann, 1997). It has been hypothesized that the extreme stress and fatigue of running and/or the physical effects of cold and dry air on local mucosal defenses impaired the host resistance to infection. It has been reported that there is a 2.5-fold increase in neutrophils in the nasal mucous membranes in long distance runners after a race (Müns et al., 1996). Other research has shown decreased levels of IgA after acute strenuous exercise over long periods of intensive training in elite runners (Mackinnon, 1997) and swimmers (Gleeson et al., 1995).

Two models explaining the risk of infections following intense exercise have been suggested. One model proposes the idea of the “open window” which is described as the 1-9 hour time period following endurance exercise when host defense is decreased and the risk of URTI is elevated (Pedersen et al., 1996). The other theory is the “J” shaped relationship between URTI risk and exercise intensity with the highest risk being evident in individuals following an acute intense bout of exercise and the lowest risk in those who regularly exercise at a moderate intensity (Nieman, 1997).

High Exercise Intensity and its Effects on Cells of the Immune System

The effects of acute exhaustive exercise on the function of immune cell parameters are varied. Strenuous exercise has been shown not only to result in a decreased ratio of T-helper to T-suppressor cells, but also to produce other immunosuppressive effects such as a decline in the ratio of CD4+ to CD8+ cells, diminished lymphocyte function, decline in the number and activity of natural killer (NK) cells, and decreased levels of IgA which may persist for several hours or even days (Gleeson et al., 1995; Mackinnon, 1997; Nieman, 1997; Pedersen et al., 1996). It has been hypothesized that if the athlete does not take time to recover and undergoes another intense exercise session, then a severe immunodpression may occur (Pedersen et al., 1996). Both acute and chronic suppression of neutrophil functions has also been reported in response to high intensity exercise (Smith, 1997).

Research on the effects of intensive exercise on NK cells is not clear due to conflicting results. A comparison of high intensity (80% VO_2max) versus low intensity (50% VO_2max) treadmill exercise resulted in an increase in NK activity during and within one hour of intense treadmill exercise. High intensity exercise has been shown to cause a significantly greater post-exercise increase in NK cells which then falls below pre-exercise levels for 3-4 hours after the exercise session (Nieman et al., 1995; Strasner et al., 1997). Although both high and moderate intensity exercise have been documented to cause a decrease in NK cells immediately after exercise, Nieman’s study showed that only high intensity exercise increased the number

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of NK cells. Additionally, a comparison of neutrophil count and NK cell cytotoxic activity (NKCA) between marathon runners and sedentary controls has been researched. Results showed that marathon runners exhibited a 57% increased NKCA over the sedentary controls. However, the sedentary controls had higher neutrophil counts than the marathon runners. There were no significant differences between the groups regarding leukocytes and lymphocyte subsets. Current research is examining the roles of catecholamines, cortisol, glutamine, vitamin C, indomethacin and their possible effects on the immunosuppression measured in intense exercise. Because both catecholamines and cortisol levels increase with exercise and have immunosuppressive effects, they are believed to be a mechanism resulting in the changes in immune cell number and function. Plasma levels of glutamine have also been shown to increase with strenuous exercise, and glutamine supplementation may attenuate these immunosuppressive effects (Castell et al., 1997).

Moderate Exercise Intensity and its Effects on Cells of the Immune System

Most of the data support the view that moderate exercise enhances the immune system’s function. Moderate exercise intensities (60% of heart rate reserve) have been shown to increase NK cell activity within as little as six weeks (Nieman, 1997). An increase in the number of NK cells has also been documented with moderate exercise. The increase in NK cells suggests that moderate exercise, such as walking, may augment immunity. It is thought that the increase in NK cells is due to the increase in epinephrine during exercise. Other health benefits include a decrease in the duration of URTI. While the number of URTIs is the same in active and sedentary individuals, it has been discovered that those who exercise experience half the number of total days with URTI symptoms per incident (Nieman et al., 1998).

Moderate exercise appears to have transient effects on several different immune cells. It has been shown to cause a transient leukocytosis which usually returns to baseline within 24 hours of recovery (Mackinnon, 1997). This transient leukocytosis may only be beneficial if the exercise is performed regularly. Additionally, production of serum antibodies appears to be enhanced following moderate exercise training (Mackinnon, 1997). Moderate exercise has also been documented to increase the number and activity of neutrophils (Smith, 1997). However, other studies have shown no relationship between moderate aerobic training and lymphocyte numbers or Ig levels (Mitchell, 1996; Nieman, 1998). One recent study compared lymphocyte subpopulations between active and inactive older women (ages 60-98 years) and found that the self-reported active subjects had a significantly higher change in CD 25 lymphocytes than those reported as inactive (Gueldner et al., 1997). It has been suggested that moderate exercise decreases the risk of URTI and possibly even some cancers (Peters, 1997; ACSM position statement).

Exercise Recommendations During Illness

If an individual has a cold or illness, the decision to exercise should be based on the symptoms. Research has shown that acute febrile viral infections decrease muscle strength and endurance performance. Additionally, it is difficult to ascertain if the illness is a harmless URTI, mycoplasma pneumonia, or viral infection which could result in myocarditis. Other complications include postviral fatigue syndrome which can persist for several months and include symptoms such as lethargy, easy fatigability, and myalgia. Therefore, the current recommendations state that if the symptoms are above the neck and there is no fever, moderate exercise is permitted. If the symptoms are systemic, it is recommended that the individual wait for two to four weeks before resuming intense exercise and/or until the fever subsides for moderate exercise (Nieman, 1997).

Exercise and its effects on the immune system has provided a stimulus for much current research. Due to conflicting evidence surrounding exercise and the immune system effects, definitive relationships have yet to be found. Additional studies are underway which continue to investigate the relationship between exercise, cortisol, catecholamines, glutamine, and aging on immune cell parameters. The frequency and duration of activity must also be further examined. Tentative conclusions are that moderate exercise prior to infection may be beneficial in terms of resistance to infection. This type of activity may promote host protection by priming the immune system before an infectious challenge occurs. However, exhaustive exercise after contracting an infection is detrimental and will suppress immune function.

References


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**A & P On the Road**

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Civil War buffs would find the National Museum of Civil War Medicine in downtown Frederick, Maryland an interesting place to visit. Frederick was a major hospital area for casualties from nearby Gettysburg, making the museum location historically relevant. This small museum is tightly laid out in a circle of six theme areas of display. Each area is developed via photographs, posters, relics, life size “dioramas” and videos. The approach combines the history of medicine and the Civil War and includes items such as the development of triage on the battle line, aesthetics in surgery, hygiene, and plastic surgery reconstruction. I found the transport coffin, which allowed burial of many of the dead in home cemeteries, with its built-in ice box and water removal tray very interesting!

Like most modern museums, the exhibits are uncluttered with a minimal number of display items to develop the theme. In fact, I was a bit disappointed. This is not the type of museum to spend slowly wandering through aisles of specimens. It is set up to educate the visitor and it does that well. The exhibits themselves do not convey the anatomical and physiological horror of so many casualties, whether from sickness or battle. Specimens, such as at the Mütter Museum in Philadelphia, would vastly improve the exhibits by giving a visual reality to match the prose of the posters.

The museum store is reason enough for the Civil War buff to visit. It is well stocked with topical books, high quality reproductions of medical instruments and other paraphernalia of the Civil War doctor as well as equipment of the soldier of the line. Some normal tourist items are also available. A strength of this museum not readily visible to the transient visitor is its very active weekend program series presented by visiting specialists. Call for the calendar.

Located at 48 East Patrick Street, the museum is open 10 a.m. - 5 p.m. Monday through Saturday and 11 a.m. - 5 p.m. Sunday. Adult admission is $2.50. Parking is available on street or in an adjacent municipal lot. (301) 695-1864 or http://www.CivilWarMed.org

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Implementing Technology in Anatomy
And Physiology Courses

At the 1998 HAPS Annual Conference, the very active HAPS Technology Committee presented a two-day seminar in which members of the Technology Committee and invited guests spoke about implementing technology into the curriculum. Highlights from these presentations are below.

“Integrating Computer Activities Into an Anatomy and Physiology Curriculum.” by Gail Jenkins, Montgomery College, Maryland.

As versatile as many software products can be, they are typically not self-instructional. Just as we would not turn students “loose” with a cadaver and simply say “learn the anatomy,” students cannot be expected to learn the operation of software on their own. Rather, students should receive precise, step-by-step directions as conceptual road maps to carefully focus their path of study through in-depth programs. A consequence of an unstructured computer activity is that students will often become overwhelmed by the extensive content, or become lost and not finish required assignments. Written directions allow customization of software to accommodate class time limitations and course objectives.

To successfully incorporate software into our curricula, structured computer assignments are essential so that students actively participate in the learning experience. Students are held accountable for completion of computer work by including the computer activity content in our theory exams and laboratory practicals. When students work on entertaining educational software, they frequently neglect to take notes. Worksheets, however, force students to take notes by actively answering questions rather than just passively clicking the mouse. Students’ retention increases because they are “doing,” not just “viewing.”

It would greatly benefit faculty purchasing educational software if the software industry provided the following materials: worksheets, sample test questions, and suggestions for their product’s incorporation within the classroom.

Successful integration of Anatomy and Physiology software requires the selection of software which is easy to navigate and truly interactive if students are to comprehend and retain concepts. Just as a good teacher utilizes effective questioning strategies, classroom software should consistently require the student to respond in a constructive manner before allowing them to move to the next concept.

“Integrating Classroom and Laboratory Uses of Technology with the Needs of Students Outside the Classroom: Some Low Cost Alternatives.” by John Dustman, Indiana University Northwest.

John Dustman’s presentation dealt with PowerPoint presentation software, laser disk images, CD-ROM, photoCD images, digital movies, and digital photographs. All of these items were imported into a VCR format to effectively deliver course material.

“Cadaver Anatomy Supplemented by Interactive and 3D Software.” by Claire R. Oakley, Rocky Mountain College, Montana.

Claire Oakley gave a wonderful presentation on securing funds for her anatomy and physiology courses. Through a variety of unique fundraising programs, she has been able to provide her laboratories with cadavers as well as computer software programs. For an in-depth review of her fundraising techniques, refer to the November, 1998, issue of HAPS Educator (“Creative Development of A&P Laboratories When Resources are Limited” page 6).

“Student Exercises for ADAM Interactive Anatomy.” by Marge Przygoda, Middlesex County College, New Jersey.

Marge Przygoda gave a lively discussion on how she has developed student exercises using ADAM Interactive Anatomy (AIA). In these exercises, the student is required to answer specific questions and integrate material.

Like most Biology Departments, Middlesex County College has struggled to incorporate computer technology into its A&P classes. The Biology Department contains a diverse faculty that have been teaching from 5 to 30 years; some of these faculty are computer experts, some are novices, and others are technophobes. It was decided that a multifaceted approach would best serve the diverse interests of the faculty and would also address a variety of student learning styles.

Thus, the faculty utilize a combination of cat dissections, models, display boards, histology photographs, muscle projects and Interactive ADAM to teach muscles. The biggest challenge was to write “interactive directions” for AIA. This was a time consuming process and is ongoing. Although the students are enthusiastic about using the computers, it is not clear if there is an increase in learning; more data is needed to determine the effectiveness of this approach.


Cat-Scans, a Hypercard software program, was created by the author to enable anatomy students to quickly and efficiently learn cat anatomy for laboratory exams. Cat-Scans provides students with an atlas of labeled cat organs AND an ability to review and test themselves by using prelabeled cat organs, quick-answers, multiple choice, and type-in choices. Students are able to listen to pronunciation of difficult anatomical terms as well. In addition to images of the cat, pictures of various sheep organs (heart, brain, kidney, eyes) are used.

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The photographs of various organ systems are larger in size than most photographs shown in a laboratory manual. Students can select which system of the cat they wish to study. After studying the Review (Pre-Test) Section, students can take a test on the material (Test Section) and those results can be printed out and given to the instructor as a Test Score or for extra credit. This program can be used by the student in a college’s Computer (Learning) Resource Center, at home, or in a Biology laboratory environment. Cat-Scans can also be used by teachers to identify individual cat muscles, arteries and veins, etc. in a Biology laboratory or lecture environment in order to show or quiz the class as a group.

Integrating A&P Histology Labs with the Latest in CD-ROM Technology by Bruce Wingerd, San Diego State University.

Bruce Wingerd presented his latest project, “The Histology CD,” which is a compilation of about 135 high-resolution images of cells and tissues that are most commonly encountered in A&P courses. Each image contains an informative caption, and 35 SEM’s are also included in the package. This program was developed by Bruce when he noticed learning problems among many of the students within histology segments in anatomy and A&P courses. Since developing the CD and making it available for sale in the campus bookstore, student learning has been enhanced because students now have the capability of studying the histology images outside of the laboratory. In addition, the CD can also be used in the histology lab to augment (or replace) the use of microscopes.

In addition to viewing the images on this multi-platform CD, students are assisted in the learning process by simple point-and-click functions which activate options such as labels and leaderlines to diagnostic features, access to a glossary that includes pronunciation guides, definitions, and descriptions of highlighted terms, and problem-solving questions. There are plans for including additional questions and self-quizzes in the near future. For additional information refer to the following website: http://www.sci.sdsu.edu/histology/

The HAPS Software List: A Sampler by Martha DePecol Sanner, Middlesex Community Technical College.

The HAPS Technology Committee has compiled a software list which has grown to seventeen pages and is currently available on the HAPS Website: www.hapsweb.org. Martha’s presentation highlighted several examples of lesser known software on the list including sections from the protein section of the new Benjamin/Cummings Chemistry of Life CD-ROM. She also showed the old HarperCollins laser disk that goes with the Tortora/Grabowski text. This video disk is now marketed by Videodiscovery.

Another CD-ROM that Martha uses in her classroom is Eroschenko’s Histology, for which she has written a lab manual that allows students to label the parts. This is available by sending a Mac-formatted zip disk to Martha. She also showed an animation titled “Human Face Formation” which is on the Nine Month Miracle, by ADAM Software.

Cyberspace: A New Dimension for Teaching Anatomy & Physiology by Alvin M. Burt, Vanderbilt University.

Alvin Burt’s discussion centered on how he currently uses the internet for instruction, what one’s school needs to provide in order for instructors to utilize the internet for instruction, and some of the basic tools needed to create a course web site. During the course of his presentation, Alvin toured web sites for two of his courses, Anatomy & Physiology and Developmental Physiology. These web sites contain pages with the course syllabi, course schedules, student assignments, and an on-line conference room. The A&P site also contains the detailed laboratory instructions and laboratory tutorials that were created to supplement each laboratory exercise. In addition, he gave some examples of how the on-line conferencing provided an opportunity for students to interact, asynchronously, to specific problems he presented during the course.

In discussing what colleges need to provide in order for faculty to develop internet instruction, Alvin listed support staff as the number one “must.” This was followed by basic hardware and internet access and a commitment on the part of the school. He pointed out that all too often administrators have the misconception that online teaching can save time, staff, and funds. He felt that on-line instruction can be a great supplement, or another dimension, to the teaching but it does not replace the classroom experience. It definitely does not save time, but is, in fact, a time consuming endeavor. A number of tools to assist in the development of a web site were discussed briefly; these ranged from helpful books and software to other web sites. Alvin presented more details on the specific tools later in the week during his workshops.


John Water’s talk centered around measuring the effectiveness of a Web based virtual reality (VR) cell biology tutorial against a traditional lecture format. Students were divided into two groups and were taught aspects of the central dogma (DNA-RNA-Protein) by working through the VR tutorial or by attending a traditional lecture using a chalk board and overhead. Students in both groups were then evaluated using the same examination to measure their understanding of the material as well as their attitudes about the topic.

Students in the lecture treatment scored significantly better on the post-test than students in the VR treatment. There was no significant difference between the pre-tests of either group. Students in the VR treatment rated their learning experience more positively than students in the lecture treatment. At least with this particular group of undergraduates, virtual reality was less effective than a traditional lecture. This is contrary to much of the currently published research; however, investigators do not usually compare technology and traditional instruction as directly as was done in this study.

Faculty and Student Sampling of Electronic Communications by Joe Natale, Texas Woman’s University Library.

This presentation outlined how faculty and distance education students benefit from library services at Texas Woman’s University. These services include extensive faculty support for publication, curriculum development and grant research interests.

Distance education students can take advantage of several document delivery functions that the main Library offers, such as journal article and book/book chapter delivery via fax, electronic mail and first class U.S. Post.

All faculty have available to them a table of contents service that allows them to receive the table of contents of favorite journal issues via e-mail. Faculty may also set up a profile with keywords.

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or phrases, which are searched each week to find new materials published. Search results are sent via e-mail every seven days.

"The Evolution of Distance Education: Impact and Implications for the 21st Century Educator," by Linda Jayroe, Director of Distance Education for Holmes Community College, Mississippi.

As part of Linda Jayroe's excellent presentation, she listed the percentages of Distance Learning courses by discipline in Community Colleges, followed by a list of keys to success in creating a distance education course. Among those keys to success are evaluating instructional needs and goals, designing the system to best address the goals, choosing technologies to meet the needs and goals, and making learning easier. In addition, other factors which need to be considered in designing a distance course include the performance of the technologies used, compatibility and interoperability with industry standards, ability for upgrading as new technologies evolve, and the design of the classroom to meet the needs of the users.

Keys to success in creating a distance education program include: 1) developing strategies for program administration and promotion; 2) gathering instructional and technical support; 3) allocating resources; 4) training instructors to use the system's technologies; and 5) developing instructional strategies that address the challenges of interacting with distance learners. Periodic evaluations of the planned, current, and completed distance learning programs need to occur. Utilizing a variety of media such as video, print, computer, fax, and voice also help in the success of a distance course. Linda's PowerPoint presentation is available on the HAPS website: wwwhapsweb.org.

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**EXPERT HELP IN TECHNOLOGY**

Could you use some assistance in incorporating technology into your course? Please feel free to contact the following HAPS members who have expertise in these areas:

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/VRLM 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
13. Using illustration packages to create stepped drawings to simulate animations.
14. Multimedia setup for lecture presentation
15. Using Word macros to create test banks.
16. Website / Mailing List Management
17. On-line Learning

If you would like to join the Technology Consultants group, please contact Martha DePecol Sanner.

HAPS Technology Consultants:

2, 5, 7, 8, 9. Alvin Burt, Vanderbilt School of Medicine, 615-322-3494, Alvin.Burt@mcmail.vanderbilt.edu

4, 9, 10, 11, 12, 14. John H. Dustman, Indiana University Northwest, 219-980-7106, JDUSTMAN@iunhaw1.iun.indiana.edu

1, 2, 9. Keith Graham, University of Saint Francis, IN, 219-434-7657, keith.graham@worldnet.att.net

1, 2, 4, 5, 11, 14. Harry Greer, Cayuga Community College, NY, 315-255-1743 X314, ProfG@aol.com

1, 9. Jeff Hochbaum, Middlesex County College, NJ 08818, 732-548-6000 ext. 3370, hochbaum@home.com

1, 2. Gail Jenkins, Montgomery College, MD, 301-650-1425, gwj@erols.com

5, 7, 8, 17. Thomas M. Lancraft, St. Petersburg Jr. College, FL, 813-341-4797, lancraft@email.spjc.cc.fl.us

7, 16. Jim Pendley, Imperial Valley College, CA, (760)355-6303, pendley@imperial.cc.ca.us

9, 12. Don Rubbelke, Lakeland Community College, OH, 216-953-7103 Donald_L._Rubbelke@lakeland.cc.oh.us

Expert Help continued on page 13
The HAPS Curriculum and Assessment Committee has begun work on the third edition of the Core Curriculum. The project is called Curriculum 2000. The name of the project is not just about a hopeful completion date but is also meant to convey the desire of the Committee that this next version of the guide be focused on and adaptable for the current and future demands of the A&P curriculum. The following information has been compiled in response to questions from a number of HAPS members concerning the new curriculum.


The idea for the next phase of the HAPS Core Curriculum began to evolve in 1995 with an e-mail exchange between then HAPS President Wayne Carley and Dan Lemons. As a result of that exchange, Dan was invited to the January 1996 HAPS Board of Directors meeting in Chicago to discuss the curricular issues that were the subject of the communication. At that meeting the Board asked Dan to organize an opening session at the HAPS 1996 Annual Conference in Portland, Oregon, in which the A&P curriculum would be the focus. They also suggested devoting an entire day to the topic at the 1997 HAPS Annual Conference in Toronto.

In response to the Board's request, Dan and his colleague, Joe Griswold, conducted a Saturday afternoon session in Portland in which approximately 100 members participated. In this session, members worked in groups to discuss their broad A&P course goals and A&P topic priorities. A summary of the session's results was published in the HAPS Educator (August 1997, pp. 15-16). Dan was also invited to attend the Long Range Planning Meeting following the 1996 Annual meeting. At that meeting, under the leadership of President Karen LaFleur, there was a prioritizing of long-range, five-year organizational goals. A summary of the results of that exercise revealed that 17 of 44 highest priority marks assigned by the Long Range Planning Committee members were given to the continued review of the HAPS Curriculum, establishing outcomes/benchmarks, clearly defining A&P content, and spending more time on educational goals by the Society. Four additional highest priority marks were assigned to having HAPS provide endorsement and accreditation of curricula, bringing the total curriculum-related highest marks to 21 of 44, which was nearly half of the highest priority ranking endorsed by the Long Range Planning Committee. By way of comparison, the next highest priority area, centralizing HAPS' office, received 14 highest marks. Additionally, when possibilities for new initiatives of HAPS were ranked, establishing a pedagogy committee received 13 highest marks out of 35; the next highest ranked was to establish a technology committee which received 4 highest marks. Taken together, these results indicated strong support for continued work on the curriculum.

At the 1997 HAPS Annual Conference in Toronto, Dan and Joe were again asked to present an opening workshop focusing on the process of defining operational learning objectives. Attendees numbered about 100 members. Later at the Curriculum Committee meeting in Toronto, it was decided that the process should be expanded by attempting to learn what types of outcomes are expected by allied health training programs that receive A&P students. Dan and Joe were assigned the task of preparing an update session on outcomes for the HAPS Annual Conference in Fort Worth (1998) and to begin working on a survey of clinical allied health faculty about their expectations of A&P students entering their course of study.

The workshops and update sessions that occurred from 1996 through 1998 helped to focus attention on what was needed to accomplish the next version of the curriculum. While in Fort Worth, the Curriculum Committee officially launched the process of building the new version of the HAPS Core Curriculum - Curriculum 2000.
Curriculum 2000 continued from page 13

2000. The Committee will be the locus of this effort as it was for the previous two editions. Given the high ranking of A&P curriculum development among the other long-range, five-year goals established in 1996, this seemed to be an important effort by the Committee on behalf of HAPS. Now that the Curriculum and Assessment Committee has begun the process, it will enter a more structured phase, hopefully with the broad and ongoing participation of the HAPS membership.

Foundation of Curriculum 2000 on the 1994 HAPS Core Curriculum

Curriculum 2000 builds on the current Curriculum which contains some general curricular guidelines, a description of optimal prerequisite courses, the distribution of laboratory and class components, and a comprehensive list of topics found in most contemporary A&P textbooks. Curriculum 2000 will attempt to meet some unfulfilled goals in the second edition of the Core Curriculum. Among these goals is the need to allow for comparability of courses and to enable competency testing that is aligned with the Core Curriculum. Beyond those already existing goals, Curriculum 2000 will be an attempt to define clear learning objectives that are rationalized in terms of desired student outcomes. Defining outcomes and learning objectives are beyond the scope of the current curriculum, but they are the elements that can make the content of the curriculum more useful to instructors from a wide range of institutions.

The Content of Curriculum 2000

The extent and depth of coverage of A&P courses varies widely according to the needs at individual institutions; thus Curriculum 2000 will have to be adaptable. As currently envisioned, it will differ from the current version of the Core Curriculum by not defining a course content minimum. Rather, it will provide a mechanism of selecting objectives and implementing learning goals for a combination of any number of topics. Once topic areas are selected, the learning objectives for each area to be covered will follow. If the A&P competency test is tuned to the specific content areas covered in a particular course, then cross-institution comparison is possible, topic area by topic area. Rather than a single competency test result, each instructor would learn how his or her students compare to other students within specific content areas.

Levels Within the Curriculum

One of the important features of the new curriculum is that it should define levels of competence in each topic area so that instructors can select the level they want their students to achieve in each topic covered. A successful A&P course will cover some topics in greater depth than others, and the learning activities and assessment need to be appropriate to the level chosen. Defining levels is a key feature which will enable comparison of course segments across institutions and the assembly of a customized competency test that is appropriate to particular institutions. The competency test will need to be designed so that it can determine several levels of achievement in each topic area. The Curriculum Committee and the HAPS membership will need to carefully consider what constitutes different levels of competence.

Curriculum 2000 as a Resource not a Prescription

Perhaps the most important feature of Curriculum 2000 is that it will not attempt to be prescriptive or define a single A&P cur-riculum, in a "one size fits all" fashion. It would be much better described as a process and a collection of tools and resources to enable A&P instructors to design and improve their A&P courses through collaboration with others in the Society. Its only prescription will be that learning activities in each course be justified in terms of the outcomes they are designed to produce. This requires a growing understanding of the outcomes to be achieved and of how specific learning activities help to achieve them.

Curriculum 2000 as a Tool

The new curriculum will include a set of web-based tools to allow members to construct their own individual curricula from its many topic areas, objectives, and levels, all of which will be stored on a central database managed by the HAPS Curriculum Committee. As more instructors use the curricular information and identify ways to achieve their chosen learning objectives, the learning objectives will be linked to a resource list of learning activities and to assessment items. All of these elements will be available via the web to members who wish to use it and will be a part of an extensive data base which will continue to expand over the years. Members will be able to download and print the curriculum at any time. In this version, the Core Curriculum will become a curriculum resource for instructors, allowing them to design their courses to meet their particular needs and to locate resources they need to meet their own chosen set of learning objectives.

Role of the HAPS Membership in Developing the Curriculum

The process of developing Curriculum 2000 will be quite different from that used for the previous versions of the curriculum. The committee has solicited the participation of as many members as possible, and currently almost 100 have expressed interest in being involved. The process will begin this spring and continue until the first new version is complete. The process will occur primarily over the web via e-mail, chat rooms, listing servers and live access to the data base that will hold the curriculum. Opportunities to work together in person will occur at HAPS Annual Conferences and, perhaps, Regional Conferences.

All HAPS members are invited to participate in the process to the degree they are able. Access to the web and a browser such as Netscape Communicator or Microsoft Internet Explorer are the only resources needed. A time frame will be established so that an orderly progression through topics can occur. The first period of time will be devoted to starting the process and to defining the broad goals of the curriculum. It is hoped that a year from now, the processes will be in motion and a preliminary version of the overall course objectives and learning objectives for one topic area will be developed. The committee is interested in comments at any time, and those sent via e-mail will be forwarded to the appropriate focus area. For now, the address to send comments is: Curriculum 2000@harold.sci.ccnny.cuny.edu

Ultimately, Curriculum 2000 should smoothly evolve into Curriculum 2001 and beyond as learning objectives are modified, added, and eliminated. This process will be guided by a growing information base about which outcomes are important for students as they move from A&P into subsequent training and careers. Over time, the Curriculum should contain not only the tools to design an A&P curriculum, but also a rich set of linked resources including learning activities, assessment items, and helpful web-based resources, all of which contribute to successful achievement of A&P learning objectives.
On Saturday, October 24, 1998, a Regional Conference on Exercise Physiology was hosted by Montgomery College in Takoma Park, Maryland. Co-sponsors for the event were Anne Arundel Community College, Charles County Community College, Delaware Technical and Community College, George Washington University, Northern Virginia Community College and Towson University. Conference attendees from the immediate Baltimore-Washington Metropolitan area were joined by colleagues from Connecticut, Georgia, Iowa, Missouri, New Hampshire, New Jersey, New York and Pennsylvania. Their conference evaluations expressed enthusiastic appreciation for the enlightening update symposia on “Joint Injury: Repair, Recovery, and Rehabilitation” by William Hazel, MD, and “Genetic Aspects of Exercise Training-Induced Adaptations” by James Hagberg, Ph.D. In addition, a Technology Update entitled “Industry Directions in Educational Software Technologies” by Clay Stone of ADAM Software was well received.

Workshop topics included practical applications of technology, the use of multimedia in both lecture and laboratory settings, cooperative learning, creating a computerized test bank, establishing good relationships with students, computer interfacing during pulmonary function testing, demonstration of microcirculation, use of interactive web software to teach anatomy and physiology, instructional applications of case studies, and creative methods for teaching particularly difficult anatomy and physiology topics.

The Steering Committee is particularly grateful for the support shown our regional conference by the participation of HAPS

President Steve Trautwein and Board of Directors members Pam Langley and Kevin Patton, who traveled from Missouri and New Hampshire to join us. Steve Trautwein gave the opening remarks and presented a popular and successful workshop entitled “Cooperative Learning in the Anatomy Laboratory.”

Steering Committee Chairperson, Gail Jenkins, finished the day in a relative state of exhaustion, but expressed gratitude with the outcome of her committee’s work in staging the conference. Other committee members were Richard Faircloth, Michael Glasgow, Wendy LeBolt, Judy Osborn, HAPS Board of Director member David Parker, Chairman of the 1999 National HAPS Conference Robert Smoes, James Sniezek, and Barbara Wiggins.

The camaraderie that developed as the committee worked for more than a year to plan the conference will remain a lasting reward for the work involved. As Steve Trautwein stated after the conference, “The Regional Conferences are where the real work of HAPS is accomplished.” Because many HAPS members are unable to attend the annual National Conferences, the Regional Conferences allow HAPS conferences to be delivered to the membership. Our Regional Conference Steering Committee feels fortunate to have participated in bringing much valuable information to HAPS members.
Our Bodies Need Your Bodies

Cadaver Use Committee Seeks Members

The Cadaver Use Committee is a newly-formed HAPS committee in need of six to eight additional members. Any HAPS member with knowledge of and expertise in the use and care of cadavers is encouraged to contact the chairperson about serving on this committee. The committee will work on all areas of cadaver usage, including lab manuals appropriate for the many ways in which cadavers are used. The deadline for selecting new members is April 1, 1999. If you have interest in serving on this committee, please contact:

Dr. Jay Druecker
Chadron State College
1000 Main Street
Chadron, NE 69337
308-432-6422
Fax: 308-432-6434
e-mail: jdruucker@csc.edu

New Safety Committee Formed

The Safety Committee will address safety concerns in the laboratory and will become a resource for HAPS members pertaining to safety issues.

The HAPS Board is looking for members interested in serving on this committee and is also looking for a committee chairperson. Initially the chairperson will work with Sandy Lewis. This is an opportunity for YOU to become involved in HAPS!

Contact: Sandy Lewis
Department of Biology
Pierce College
1601 39th Ave. S.E.
Puyallup WA 98374
1-253-840-8377
slewis@pierce.ctc.edu

Share Your Tips for Distance Learning

As chair of the Distance Learning Committee, I have been asked by HAPS members to create a list of instructors who are involved in distance learning. Any type of course qualifies as long as it has a component where students are learning at a remote location for a portion or all of the course. Although information about Anatomy and Physiology distance courses are preferred, information about any science distance learning courses would certainly be appreciated. The compiled list will be utilized as a resource for other HAPS instructors who are designing/teaching distance courses. Please send me your name, contact information, a short description of the course, and if there is an internet component, the internet address (URL).

Thomas M. Lancraft
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Box 13489
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Funds Available for ASBMB Meetings

The 1999 annual meeting of the American Society for Biochemistry and Molecular Biology (ASBMB) will be held May 16-20, 1999, in San Francisco. The international meeting is entitled “New World Science for the Next Millennium” and is jointly sponsored by ASBMB, the Pan-American Association for Biochemistry and Molecular Biology, the Canadian Society of Biochemistry and Molecular and Cellular Biology, and the Division of Biochemistry of the American Chemical Society. In conjunction with the meetings, there is available a variety of monetary awards to both undergraduates and undergraduate faculty. Undergraduate incentives include free registration, money for winners of a poster competition, and travel awards. In addition, ASBMB will award 20 travel fellowships of $500 each to undergraduate faculty.

Application forms for all of the above awards plus any additional information can be found at http://www.faseb.org/asbmb/ or (301) 530-7010.
Have you ever 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**
Craig Clifford, Chair
Northeastern State University
611 N. Grand Avenue
Tahlequah, OK 74464
(918) 456-5511 x 3827
(918) 458-2325 (fax)
clifford@cherokee.nsuok.edu

A three-year plan includes widely 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
(219) 980-7106
(219) 980-7125 (fax)
dustman@iunhaw1.iun.indiana.edu

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**
Joe Griswold, Co-Chair
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City College of New York
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**EDITORIAL ADVISORY BOARD**
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Members of the Editorial Advisory Board provide advisory and support services to the HAPS-EDucator editor such as writing articles and proofreading the final draft of the HAPS-EDucator before it goes to press.

**GRANTS AND SCHOLARSHIPS COMMITTEE**
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(412) 836-7129 (fax)
esty@vms.cis.pitt.edu

This 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.

**MEMBERSHIP COMMITTEE**
Connie Vinton-Schoepske, Chair
3138 W. 4th
Waterloo, IA 50701
(319) 235-6179
mrs@forbin.com

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

**NOMINATING COMMITTEE**
Christine Martin, Chair
Science Dept.
Stark State College
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Canton, OH 44720
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cmartin@stark.cc.oh.us

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.

**ANNUAL CONFERENCE COMMITTEE**
Henry Ruschin, Chair
Humber College, North Campus
205 Humber College Boulevard
Etobicoke, Ont., Canada M9W 5L7
(416) 675-6622 x 4641
(416) 675-2015 (fax)
ruschin@admin.humber.on.ca

The primary responsibilities of this committee are 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.

**REGIONAL CONFERENCE COMMITTEE**
Lisa Lupini, Chair
Baker College of Flint
1050 W. Bristol
Flint, MI 48910
Lupini_L@acadfl.baker.edu

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

**TECHNOLOGY COMMITTEE**
Martha DePecol Sanner, Chair
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MDSANNER@aol.com

The committee monitors and reports on technological changes influencing anatomy and physiology teaching, such as advances in instructional software and data acquisition equipment.
Sail into Baltimore
13th Annual
HAPS Conference
May 22-28, 1999

For more information contact:
Coordinator: Bob Smoes
Towson University
E-mail rsmoes@towson.edu
FAX 410-830-2405