

The Medical Educator's Resource Guide

John R. Cotter, Ph.D.

For some time now, our school has been investing in high-technology equipped classrooms and workshops that train the faculty in the use of presentation software and other computer applications. The result is that many instructors have digitized their lecture materials and stored them on CD-ROM, ZipTM disks, personal computers or local networks.

As a morphologist who has assembled a number of 35 mm projection slide-based presentations, the convenience of storing and organizing, or for that matter reorganizing lecture materials in digital formats was appealing. So, this summer I spent a considerable amount of time preparing lectures on the structure of the cell, and restructuring and adding to a lecture on microscopy that was previously created with Microsoft[®] PowerPoint[®].

The lecture on microscopy had incorporated time-lapse videos from **CELLS Alive!** The videos showed bacteria dividing, and cells moving and ingesting other cells. The idea was to drive home the point that the cells and tissues discussed in lecture and viewed in the histology laboratory should be thought of as living things, not pieces of dead tissue that had been preserved, processed, stained and mounted on glass microscope slides.

The lectures on the structure of the cell contain a large number of images, some of which are from a personal collection of photomicrographs. Most are from the CD-ROM of the 4th edition of Wheater's Functional Histology by Barbara Young and John W. Heath. Not surprisingly, the images of cells are static images that illustrate the substructure of the cell as it is seen when viewed with a standard microscope or an electron microscope.

As the lectures on the cell took shape, I wondered if there was something on the World Wide Web that would once again illustrate the vitality of living cells and processes that occur in living tissues. Revisiting **CELLS Alive!** (reviewed below), I found animations for a portion of one of the presentations. By hyperlinking to the **CELLS Alive!** Web site, animations of the cell cycle and mitosis were added to illustrate the timing of phases in the cell cycle and the morphological changes that occur during mitosis. In addition, I found an on-line karyotyping exercise that was incorporated into the portion of the presentation dealing with meiosis. By hyperlinking to **The Biology Project: Human Biology** (http://www.biology.arizona.edu/human_bio/human_bio.html), the karyotyping exercise was used to demonstrate how homologous chromosomes are matched and disorders diagnosed through the creation of a patient's karyotype. If you have also used on-line materials for lecture, please consider sharing your experience with our readers by submitting a review of the sites that you are using to The Medical Educator's Resource Guide.

Send all submissions to jrcotter@buffalo.edu or use the IAMSE Web page (http://www.iamse.org/pub/bse_resource.htm). Please include the URL and a short critique of between 100 and 200 words.

Anatomy of the Pelvis and Perineum: Multimedia Textbook and Teaching Module. Virtual Hospital[®]. University of Iowa.

<http://www.vh.org/Providers/Textbooks/pelvis/pelvis.home.html>

The Virtual Hospital **Anatomy of the Pelvis and Perineum** is one of several anatomy sites at the Virtual Hospital, a digital medical library designed at the University of Iowa. Since the pelvis and perineum are particularly complex and difficult anatomical regions to understand, anatomy students will benefit from the unique views and perspectives this site offers. The site has five sections. While most of the sections are amply illustrated, more attention is given to pelvic structures than to those of the perineum. "Osseous Anatomy" and "Ligamentous Anatomy" use color-coded and labeled photographs of the pelvic bones with superimposed drawings of the ligaments to illustrate relevant features and

concepts. In contrast, "Muscular Anatomy" is a detailed series of MRIs of the region with highlighted structures and labels. These MRIs are particularly useful in that they provide different views of the muscles from those illustrated in standard textbooks and atlases. "Functions of the Pelvis" are discussed only briefly. This section would benefit from a more detailed discussion of clinically important concepts, e.g., birth trauma, uterine prolapse, and hypertrophy of the prostate gland. The final section "Defecation" focuses on one clinically relevant pelvic function in detail. This site will clarify anatomical relationships that students find difficult to understand. It illustrates the anatomy by using radiological techniques thus complementing conventional illustrations used to teach this region. (Reviewed by Judith M. Venuti, Ph.D., Louisiana State University Health Sciences Center.)

Cancer Teaching and Curriculum Enhancement in Undergraduate Medicine (CATCHUM). University of Texas Medical Branch Educational Cancer Center.
<http://www.catchum.utmb.edu/index.htm>

CATCHUM is an evolving resource for Cancer education. Developed by a consortium of eight Texas Medical Schools, the **CATCHUM** site provides a plethora of high quality teaching materials and links for cancer education. The Educational Resources tab opens a menu for the most valuable components. The SAP (Standardized Assessment Project) exams are a database of quality multiple-choice questions relating to cancer- biology, prevention, diagnosis and treatment. The OSCE menu provides well developed cases for use in OSCEs. Learning objectives and an assessment checklist, by cancer type, are available under the Ambulatory Care menu. The PBL menu currently contains 12 superbly written cases developed in a PBL format, including time frames. Each case includes both a facilitator's guide and student case. The facilitator's guide includes learning objectives, learning issues, discussion questions and possible answers as well as the complete case. The cases make good use of images, color and black/white. Accurate and authentic reports add credibility to the cases. These cases are well designed and comprehensive. These cases can be used in a variety of settings. Registration is required to access the cases, though they are free. The **CATCHUM** staff is very helpful and responsive. They will contact you for information on your impressions and how you used the cases and exams. *(Reviewed by Edward P. Finnerty, Ph.D., Des Moines University.)*

CELLS Alive! James A. Sullivan. Quill Graphics®.
<http://www.cellsalive.com/index.htm>

Lights, camera, cells alive! The graphics on this site convey the vitality of an eclectic collection of cells and small organisms that should get the attention of all who partake. Many topics, which are of interest to cell biologists, including phagocytosis, locomotion, chemotaxis, apoptosis, mitosis, the cell cycle, and inflammation, are briefly considered using time-lapse video capture, video animation and animated GIF images. In addition, there are images of crystals, images of specimens that were taken with different kinds of microscopes, and an introduction to cell structure. By far the best thing about this site is that many of the graphics, if not used outside of the classroom, can be used for educational purposes. *(Reviewed by John R. Cotter, Ph.D., State University of New York - Buffalo.)*

Pathology of the Kidney: Glomerulonephritis. Donna J. Lager. The University of Iowa: Virtual Hospital®.
<http://www.vh.org/Providers/Textbooks/GN/GNHP.html>.

This site concisely summarizes the abnormal morphology and clinical findings that are associated with diseases of the glomerulus. Morphological changes in the structure and cellular composition of the glomerulus are illustrated with silver stained sections, immunofluorescence, and transmission electron microscopy. The use of labels and the enlargement of some of the electron photomicrographs would enhance this site's high quality images. In their absence, those without a background in renal pathology may have difficulty interpreting the images. For this reason, the site is highly recommended but only to students who have been previously introduced to the histology and pathology of the glomerulus. *(Reviewed by John R. Cotter, Ph.D., State University of New York-Buffalo.)*