

HISTOLOGY

online *textbook* and *atlas* for
medical and health sciences



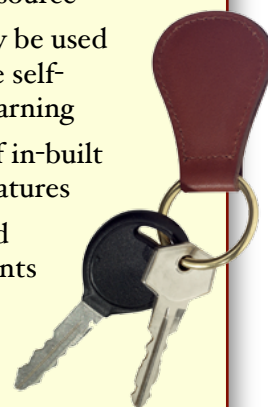
Overview

The purpose of this brochure is to provide instructors of histology an introduction to a new web-based histology learning resource for medical and health sciences students.

Histology-online is the culmination of over seven years development by Associate Professor Geoff Meyer at the School of Anatomy and Human Biology, The University of Western Australia.

This information pack provides an introduction to:

- the scope and scale of this learning resource
- how it may be used to promote self-directed learning
- a review of in-built learning features
- anticipated developments
- improved learning outcomes



Welcome to histology-online, the educational resource that makes learning histology efficient and effective.

Most histology teaching departments have long recognised the power of computer-aided learning and have introduced courseware and other

web-based learning support materials for their students.

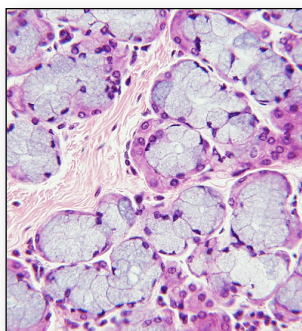
However, the creation of high quality teaching material is an extremely time-consuming task.

Histology-online provides a comprehensive and flexible resource that can be tailored to suit specific course needs.

EVERY PICTURE - A THOUSAND WORDS

Traditional histology text books have a limited number of color plates. Color images promote student learning. However, printing is so expensive that text book editors are constrained, with a typical book containing perhaps 800 color plates.

Histology-online contains 4,569 color images. This means students learn



faster and achieve better grades.

The image-intensive nature of histology-online enables direct reference to the morphology of a tissue or cell structure. Histology-online directs learners precisely to the feature of interest using hyperlinks. This facilitates highly targeted, efficient and effective learning.

INTRODUCING GEOFF MEYER AND JOHN CAMPBELL

Associate Professor Geoff Meyer (*left*) of the School of Anatomy and Human Biology at The University of Western Australia has collaborated with Professor John Campbell, Department of Neurobiology, The University of California at Los Angeles to develop histology-online. This ensures that histology-online meets all learning outcomes expected of histology courses provided within Australian and USA Medical and Dental School curricula.

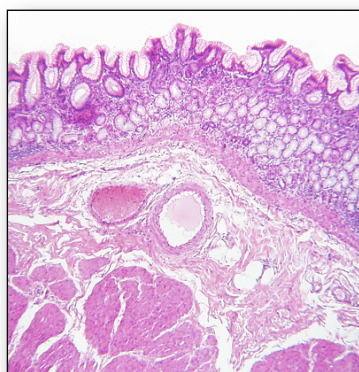
Professors Meyer and Campbell plan to maintain their collaboration, delivering additional learning tools and enhanced content to meet international standards for histology education and knowledge.

As a result of his work in leading this initiative, Geoff Meyer has been recognised with an Australian University Teaching Award and acts as an assessor for Australian University Teaching Awards for the The Carrick Institute for Learning and Teaching in Higher Education .

He has also received a University of Western Australian Excellence in Teaching Award and Teaching Fellowship Grant.



SELF-DIRECTED LEARNING STYLES SUPPORTED BY HISTOLOGY-ONLINE.COM



Strategic plans for education increasingly emphasize the requirement to “meet the needs of students” and “improve the student learning experience.”

Histology-online offers the ability to clearly demonstrate

delivery against student requirements while significantly advancing the quality of learning outcomes.

The student cohort in university and college education is changing very rapidly. The vast majority of students have part-time work commitments which means that they are balancing the demands of their education against other calls on their time.

As a result students are less tolerant of inflexibilities in course and study requirements.

Histology-online offers an opportunity for students to complete required learning

milestones off campus using a web browser.

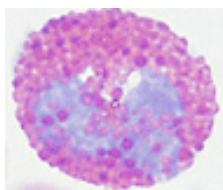
Instructors may choose to provide lectures and define formal laboratory practical class sessions to augment the students’ web learning experiences.

Students prepare for practical class sessions using histology-online and attend their laboratory class prepared to work independently and in a self-directed learning mode.

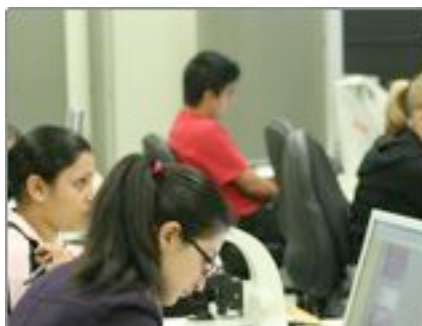
Students who prepare in this manner learn more efficiently and require significantly less assistance from instructors and lab demonstrator support staff.

ON-LINE TEXT BOOK, ON-LINE ATLAS

Histology-online is a textbook and atlas for courses in medicine and health sciences. Designating histology-online as the key learning resource delivers a win-win result: enhanced learning efficiency and outcomes for students, exceptional resources for instructors, as well as significant cost savings for academic departments.



INTRODUCING HISTOLOGY-ONLINE - UNIVERSITY OF WESTERN AUSTRALIA



Anatomy Lab: students test their mastery at the 2007 examination. **Microscopes along side Computers**

Several years ago, the combination of increased medical students, aging microscopes and battle-scarred slide sets promoted the need for a major funding commitment to histology teaching.

Unfortunately the economic realities facing the School meant that it was simply not feasible to splash out to upgrade teaching space and buy new equipment.

These pressures led to the redefinition of potential solutions.

At the same time the School took the opportunity for a stock-take on what it understood about the preferred learning styles of today's young adults.

It sought the ability to replace glass slides and aging microscopes with a low cost

means of presenting 'instructional quality' histology images.

The School determined that it also wanted to do away with the need to conduct lab classes using support staff or demonstrators to support student learning.

The solution was a computer-based image resource with a comprehensive coverage of the tissues and cells of the human body.

The result was histology-online - a web enabled histology teaching system.

Geoff Meyer shares his insights on histology teaching using histology-online in his blog at www.histology-online.com

KEY FEATURES OF THE HISTOLOGY-ONLINE WEB INTERFACE

Hierarchical tree of histology structures

Eccrine sweat gland duct link - click the hyperlink to display the image and related text

Instructional quality high resolution histology image

Just enough descriptive text of a 'textbook' nature to capture the right level of knowledge

Key tissue features highlighted in text as **hyperlinks** which activate interactive **labelling** to clearly indicate the feature of interest

Tutor link which contains extra descriptive text plus additional tissue images at various magnifications - mimicking the views evident through a light microscope

Histology-online is a mature product. The user interface has evolved over years of student-centred refinement and continuous improvement. A typical screen view presented to the histology learner is shown above with major features highlighted using arrows and associated descriptive text.

Testimonials from product users may be reviewed at www.histology-online.com

KEY FEATURES: PERFORMANCE UPLIFT, COST SAVINGS

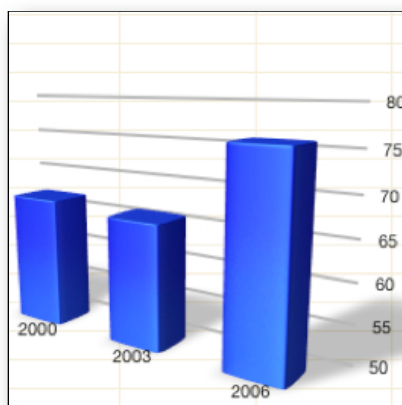


Figure 1: Student Performance Uplift: before and after histology-online introduced (average grade %).

Grades Improve

Normally, students studying histology at undergraduate level apply themselves at various levels of engagement resulting in a range of grades. Before histology-online the mean grade achieved was typically around 65%. As you would expect, traditional high-achieving students in Medicine, Dentistry and Physiotherapy all attain very high grades using histology-online.

Figure 1 shows the increase in the mean student grade before introduction of histology-online (2000 and 2003) and then after the introduction of histology online and its “mastery learning” assessment packages in 2006.

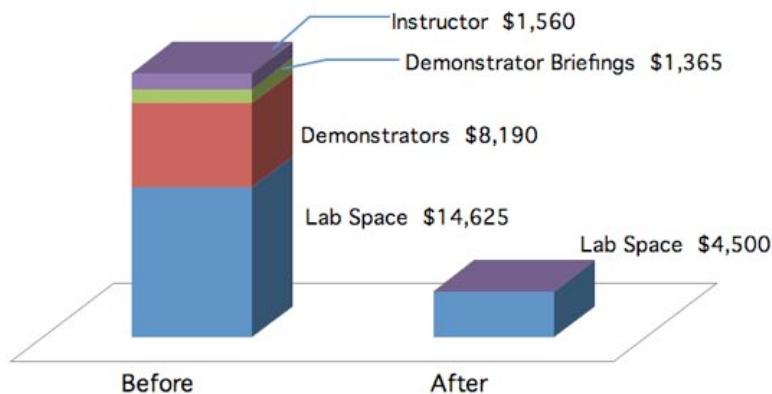
When a course is delivered with traditional laboratory practical classes often one revision session is insufficient time for the student to revise class slides and do so thoroughly enough to prepare adequately for examinations.

Who can blame students choosing a histology course knowing they can do very well and enhance their chances of being accepted into a graduate medical program.

Significant Cost Savings Achieved

Introducing histology-online enabled the School to redefine how it ran laboratory classes. Instead of running a three hour lab class each week, once histology-online was introduced labs were offered once every four weeks, to allow students the opportunity to familiarize themselves with microscope technique.

Figure 2: Cost comparisons: before and after histology-online introduced - *The School of Anatomy and Human Biology made savings of \$21,240 each semester as a result of introducing histology.online and moving from 13 labs per semester with four demonstrators to four labs per semester and no demonstrators.*



Enjoy teaching more...

Histology-online has offered Geoff Meyer the opportunity to re-shape his approach to teaching and focus on matters which are both more enjoyable and more fulfilling.

Histology-online minimises the time spent dealing with low order routine and procedural student questions. Dr Meyer’s time spent assessing student performance is significantly streamlined due to the automated assessment procedures that histology-online enables.

The future holds...

We would be very happy to respond to any enquiries regarding customisation of this resource to suit special course needs.

Histology-online also caters for students wishing to complete a histology course completely online – your institution could credit this course towards a qualification.

Review the resource...

Histology-online welcomes instructors who would like to review this teaching resource.

Please visit our site and make contact using the email address below to arrange a complementary login and password that will allow you full access:

info@histology-online.com