Technology in Medical Education: Collaborate!

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The plan:
1. Colleagues
2. iPads & Canvas
3. iPads & written assignments
4. Self learning/testing program
5. Controlled/progressive disclosure
6. Video cases
7. Other online image resources
8. Support
Colleagues

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If you have more names to add, please email them to me and I’ll add them.
iPads and Canvas

- Self directed laboratory guide
- Slide Viewer
- Text based assignments
Self Learning/Testing Software

1 / 24. Name the tissue indicated, be specific.

stratified squamous, keratinized epithelium

Epithelium

You will soon recognize that the wispy material on the surface is keratin and this means skin, which is stratified squamous, keratinized epithelium.
No programming required: you supply text files and images...

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S</td>
<td>Name the tissue</td>
<td>Indicated, be specific</td>
<td>stratified squamous, keratinized epithelium</td>
<td>Images/Epi 03</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
<td>Name a function of the tissue indicated</td>
<td>protection</td>
<td>Images/Epi 03</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>S</td>
<td>Name the tissue</td>
<td>Indicated</td>
<td>stratified</td>
<td>Images/Epi 03</td>
</tr>
</tbody>
</table>

- You will soon recognize that the wispy material on the surface is acellular keratin and this means skin, which is always lined by stratified squamous, keratinized epithelium.
- Stratified epithelia, such as that seen here in thin skin, provide a barrier to prevent entry by microorganisms. The barrier may be both mechanical and chemical.
- The keratin layer here is thick, not.

...and the program displays your data for self-learning and self-testing
Controlled/Progressive Disclosure in Cases

CC: Spider bite

HISTORY OF PRESENT ILLNESS: Stefan is a 26-year-old man presenting to the Emergency Department for concern of an infected spider bite. He states that about a week ago he was putting on a shirt when he felt something bite him on his right arm. He thinks maybe it was either a black widow spider or brown recluse, but didn’t really see it. 3 days later, he developed fever and redness around the bite so he referred himself to a nearby clinic, and was prescribed dicloxacillin. Despite 4 days of therapy, he has persistent fever, and now new chills and sweats starting yesterday. His arm is extremely painful with worsening redness surrounding the bite. Stefan has also developed some mild shortness of breath with a cough. Last night, he had to sleep in a recliner, because lying flat on his bed caused more difficulty breathing.

PAST MEDICAL HISTORY: He has had one previous hospitalization for a drug overdose requiring intubation and mechanical ventilation 2 years ago. He was told he had rheumatic fever when he was a child, but doesn’t recall much more than that.

MEDICATIONS: None

Etc.

Students discuss case and will eventually need more information...

Host + Defense, Case 14 (4/30/12), Dr. Richard Patten
1. Students will ask for some or all of the blue items below.
2. Facilitators should then provide the data.
3. How to allow each group to do this at its own pace, in any order, and without using paper?

**CBC w/differential +/- comprehensive metabolic panel**

**Urinalysis with urine microscopy**

**Blood and urine cultures**

**Echocardiogram**

**Chest X-ray (PA & lateral)**

**Viral hepatitis and HIV**

**ESR ("sed rate") +/- CRP**

**CT scan of the chest**

**Toxicology screen**
### Controlled/Progressive Disclosure in Cases

**Solution:** deliver data via Canvas, using **Surveys** under the Quiz tab.
(Thanks to TLT)

<table>
<thead>
<tr>
<th>Test</th>
<th>Survey Name</th>
<th>Access Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC w/differential +/- comprehensive metabolic panel</td>
<td>Picard</td>
<td>101</td>
</tr>
<tr>
<td>Urinalysis with urine microscopy (because of “dark urine” and workup of endocarditis)</td>
<td>Data</td>
<td>173</td>
</tr>
<tr>
<td>Blood and urine cultures should be ordered, but will be “pending”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An echocardiogram will probably be ordered, but it will take time to perform this test.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A chest X-ray (PA &amp; lateral) should be ordered (because of respiratory distress and hypoxia)</td>
<td>Laforge</td>
<td>227</td>
</tr>
<tr>
<td>The patient should be screened for viral hepatitis and HIV (due to high-risk exposures of IV drug use)</td>
<td>Troi</td>
<td>316</td>
</tr>
<tr>
<td>The following tests are <strong>optional only</strong>, and can be disclosed only if asked for. They are not necessary to complete the case, and can be asked for at any time.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For an ESR (“sed rate”) +/- CRP</td>
<td>Worf</td>
<td>463</td>
</tr>
<tr>
<td>For a CT scan of the chest</td>
<td>Crusher</td>
<td>508</td>
</tr>
<tr>
<td>For a Toxicology screen</td>
<td>Guinan</td>
<td>634</td>
</tr>
</tbody>
</table>
Video Cases

Host + Defense, Case 13 (5/1/12)

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Internal Medicine

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Medical Ethics

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Eccles Library
4. Online Image Files

U of U Slide Viewer
http://fenu.med.utah.edu/v/189/
Jeff Folsom, Hang Wong, Eccles Library

Mohamed Salama (mohamed.salama@path.utah.edu)
Chris Garcia
Digitalpathology Project: digital.path.utah.edu
Pathology Department, ARUP

Valerio Pascucci (pascucci@sci.utah.edu)
Computer Science
Imaging, visualization, large data sets
http://www.sci.utah.edu/visus.html
Dr. Balamurali Ambati with student and Welch-Allyn iExaminer system
Odds and ends...

Some things to avoid: http://www.things to avoid

A note on things to avoid: Notes from Rick and Rick