Report for OER Joint Project:

Clinical Hematology Atlas: A Pictorial Guide for Hematology Laboratory (Taylor and Doty)

**and**

Urinalysis Atlas: A Pictorial Guide to Formed Elements in the Urine (Doty and Taylor)

**OER project description**

In Medical Laboratory Science (MLS) Hematology courses, students learn to evaluate normal and abnormal blood cell morphology through microscopic examination of blood smears. Similarly, students in (MLS) Urinalysis course, learn to evaluate normal and abnormal formed urinary elements through microscopic examination of urine sediment. They learn to interpret results and correlate with other laboratory data to identify hematologic disorders and identify urinary and metabolic disorders. Access to quality cell and urine atlases are a vital tool in this learning process. Because the cost of printing pictures is so great, the price of printed atlases are high. The number of images included is limited. And many excellent atlases are now out of print. This project seeks to eliminate those challenges for students by giving access to an OER Blood Cell Atlas and an Urinary Formed elements atlas. This format is easily accessed during student’s time on campus and will continue into their careers as medical laboratory scientists. There are not currently many medical subject resources available as open resources. It is our hope that other MLS/ MLT students and professionals, medical students and other allied health professionals will find this resource beneficial. This project is unique in that students are the main contributors of the pictures used. While not entirely comprehensive at this point, the OER platform will allow for continual updating as new images become available.

Link to the two Atlases

<https://med.libretexts.org/Courses/Oregon_Institute_of_Technology>

**Challenges encountered and lessons learned:**

* There was a significant learning curve for students to operate the cameras on the microscopes and take quality pictures. To combat this challenge students created specific protocols on how to operate the cameras and resolve images.
* Learning Libretext posed some difficulties. We found that mentorship from Kristin Whitman and Libretext instructors was beneficial. There were also many online tutorials that were helpful.
* It is important to determine acceptable image formats prior to uploading to Libretext.
* Student availability can sometimes slow the process. In the future we would outline expectations, and create a timeline that included more frequent check-ins.

**Student outcomes observed:**

 **Hematology Atlas**: Students were asked to provide feedback on using the Atlas for MLS 442 and MLS 452 Hematology I & II. Overall feedback was positive and students felt that the atlas was valuable for their learning and appreciated the cost effectiveness. There were some suggestions made by students that we may include in future updates. Here are some examples of written feedback that was received from students.

*“The atlas has been incredibly helpful to me, both back in fall when first going through differentials and still now when I need a reminder. I certainly reach for it first over the book, however sometimes the book is more valuable as it has a good deal more pictures and information available. I recognize that is outside the scope of the digital atlas, however. If I could suggest anything, perhaps a link to more pictures of examples of cells help externally, either in a google drive folder or some other support platform or even on the tablets themselves. “*

*“I don't feel I have much feedback past what you've already addressed, but I do very much like how one of the physical atlases has a comparison section after each chapter where it showcases cells beside each other and lists the cellular component differences and data below it. (I think it might be the smaller sized atlas generally seen at the front of the class.)”*

*“I used the tablet atlas regularly and found it helpful.”*

 **Urinalysis Atlas**: Students do not have MLS 449 Urinalysis till Spring 2024 term, since the atlas was completed on 09/23, students have not had the chance to use the atlas yet. No comments from students can be given at this time.

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