

Letter

All aboard: Cytotechnology student training in pathology informatics

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Sir,

Pathology informatics is now recognized as an important component of pathology training.^[1,2] Learning objectives and rotations in informatics have been established in an effort to train pathology residents.^[3,4] Educated residents and formally trained informatics fellows play an important role in the future of this specialty. However, the success of pathology informatics also relies on the competencies of their allies (pathology assistants, cytotechnologists, medical technologists) in informatics. While the American Society of Clinical Pathologists (ASCP) offers some informatics training to medical technologists through its "Qualification in Laboratory Informatics" program, unfortunately insufficient attention has been dedicated toward training the various technologists in the field of pathology.

The Anisa I. Kanbour School of Cytotechnology at the University of Pittsburgh Medical Center (UPMC) recently updated their curriculum to include a course in informatics for its cytotechnology students. The hospital-based, 12-month program for postbaccalaureate biology graduates has traditionally been based mainly on training in morphology and limited to ancillary studies. However, in order to keep abreast with changes in the practice of cytopathology (e.g., molecular pathology and informatics),^[5,6] modifications of the curriculum were deemed necessary to reflect current practices.

In addition to keeping pace with evolving technologies in the field, impetus for this change in cytotechnology student training was partially market driven. Demands for new graduates who have a more diverse technical background than just morphologic skills are more desirable

first-hires. In response to changing skill requirements, the American Society of Cytopathology (ASC) published a white paper in 2010 regarding the future needs of the profession.^[7] The ASC commissioned the Forbes group whose findings outlined forces that might lead to the emergence of new professions or roles in cytology. The group emphasized the need to create new skills and expanding traditional roles merging morphologic skills with new technologies for the profession's survival. Professional predictions of traditional microscopy obsolescence, new guidelines calling for less frequent Pap testing, and the digitization of proficiency testing^[8] necessitated course modernization.

As a result, eight cytotechnology students were exposed to pathology informatics practices and technologies in the form of an interactive 2-day course. To the best of our knowledge, the school of cytotechnology at UPMC is currently the first of 31 accredited programs in the USA to offer a structured, formal informatics course. The course was provided by the collaborative effort between the school of cytotechnology and informatics division in the department of pathology. The goals of this course were to introduce the students to the fundamentals of pathology informatics (e.g., terminology, basic computing,

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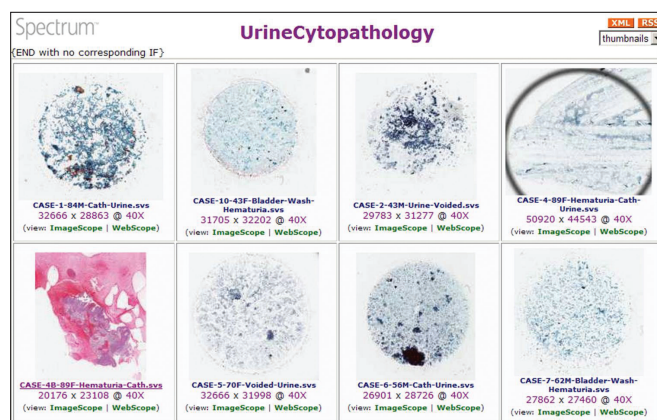


Figure 1: Example of a digital slide teaching set for cytotechnology students

coding, data management, etc.), explain and demonstrate to them various information technologies (e.g., laboratory information systems, digital imaging, telecytology, etc.), and offer them “hands-on” experiences (e.g., scanning glass slides to create whole slide images, perform internet literature searches). Students were required to construct a presentation of an interesting case in which they inserted both static and virtual images into the final report.

The course was well received by the students who completed a questionnaire about it. The course evaluations indicated the participants’ overall satisfaction, with only slight reservation concerning the impact informatics will play in their future practices. Following the course, students were more comfortable with digital imaging, and even able to access the institution’s

digital slide teaching sets in preparation for their final examinations [Figure 1]. While informatics training may be considered important by many technologist training programs, inadequate resources and lack of formal, structured programs may limit training. Therefore, we recommend that programs begin to partner with pathology departments who have informatics resources to leverage their faculty and equipment such as whole slide scanners. In the near future we can anticipate that well-trained cytotechnologists will begin to fill a niche for informatics within pathology departments.

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