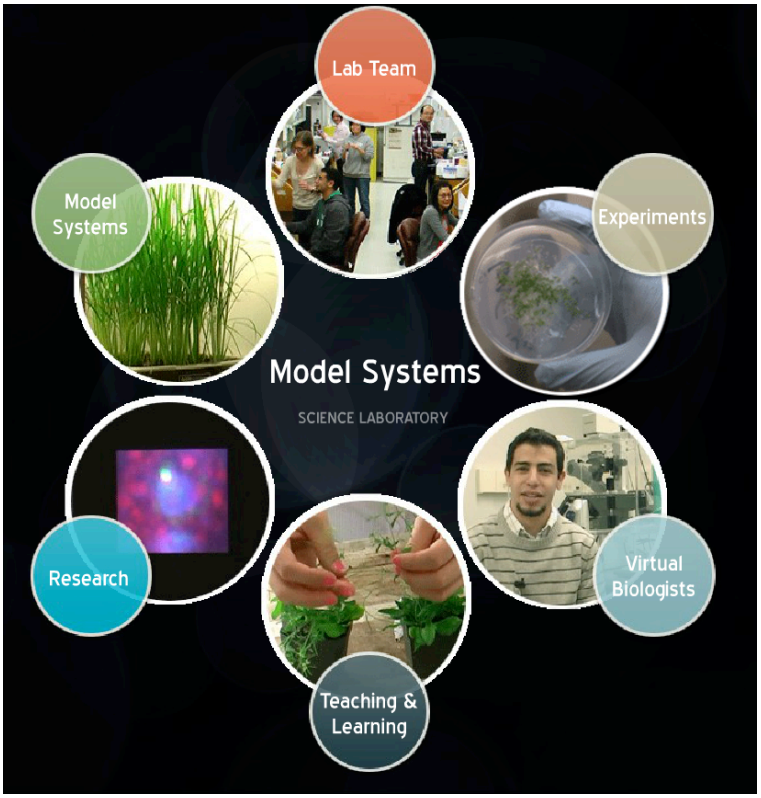
IUE Virtual laboratory course: experiential learning for modern biology

Course Development: Model Systems Virtual Laboratory

The following is a progress report on the development of a blended online course for new teachers through the Institute for Urban Education. Our goal is to help make real biological science investigation accessible through a blending of interactive online experiments in a Model Systems Virtual Laboratory and simple experiments, which may be performed in a non-laboratory environment.

These new teachers will learn biological systems through combination of a virtual interactive environment and face-to-face tours of my laboratory at the UMKC to learn about experiments done there. They will also perform practical "kitchen sink" experiments that may be conducted in elementary or middle school classrooms.



The Model Systems Virtual Laboratory module consists of Model Systems Presentations, Lab Team Profiles, Interactive Experiments, Virtual Biologists, Teaching and Learning Strategies and Research Presentations.

This online teaching and learning tool will initially be built in Flash, and later converted to HTML5. It is being developed in conjunction with the eMentor program at the University of Missouri. The online resource will be delivered through the UMKC Learning Management System, and students will receive biology science credit following successful completion of the 2 credit hour class.

The course is being developed in cooperation with the IUE and is projected to be offered in 2012-2013.

The syllabus is currently in development and will reflect a rigorous introduction to biological sciences, with an emphasis on scientific method. The course design incorporates a research question as the foundation for experiential learning, both in the virtual environment and in simple experiments, which may be replicated in classrooms. The intention is to provide the confidence and skills necessary to support the effort to bring real biological investigation into the urban classroom.

Students will be able to explore the work of real scientists working with model organisms such as yeast, Arabidopsis and rice. This approach will provide a human face to scientific work.


Virtual Biologist - Cell Biologist
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Virtual Biologist - Cell Biologist
Tarik El Mellouki, PhD candidate at the school of biological sciences, UMKC
(Click the arrow top right or select a question)
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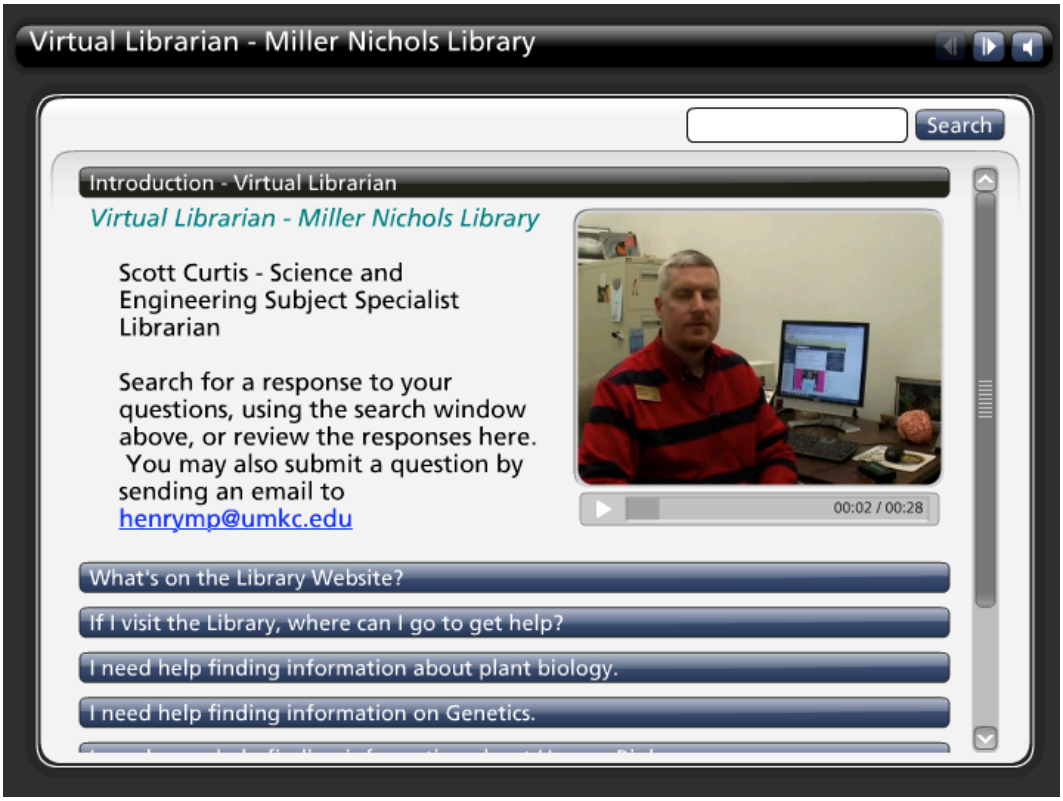
How did you get interested in Biology?
What is Gene Expression?
How do you observe RNA?
How do you tag cells?
How do you observe the tags?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