## Introducing TUSK to Enhance One Health Teaching and Learning and Capacity Building.

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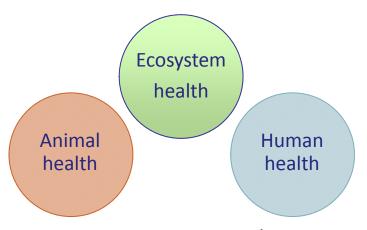
**Manager User Support Services** 





### Health education

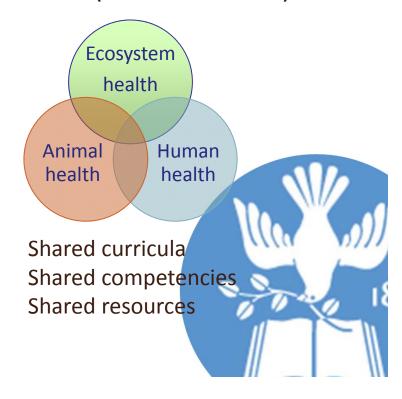
### Now (disciplinary "silos")



Separate curricula Separate competencies Separate resources



### Future ("One Health")





- Tools for Active Learning
- Knowledge Management
- Curriculum Management
- Competency Based Education
- Mobile Learning

## Enterprise Educational

### Personal Knowledge Tools

Track Learning Portfolio (competencies, patient logs)
Annotate content
Create collections using personal folders
Upload content to folders to share with self/group/class
Download schedule and content to mobile device

Self-test with Flash Cards Subscribe to Podcast and RSS feeds

#### Collaborative Tools

My Groups (e.g. for PBL)
Discussion boards
Wikis
Blogs
Word to XML

Thesis development group



- · Enterprise system for institutions and regions
- · Designed for health sciences
- · Moving to open source and non-health areas
- · Access from mobile device

### Teaching and Learning

Delivery of course content
Self-assessment and graded quizzes
Virtual patients
Tutorials
Learning object repository
Flash cards
Mobile access to content
Delivery of audio and video

#### Content Management

Create documents with semantic markup

### Administrative Tools

Map and monitor curriculum
Competency tracking/publishing
Create and manage course and program evaluations
Clinical evaluations by student, discipline, and site
Track accreditation data
Manage groups and course enrollment
Manage standardized patient evaluation
Create flexible time periods and teaching sites
Create courses
Import schedule

#### Course Management

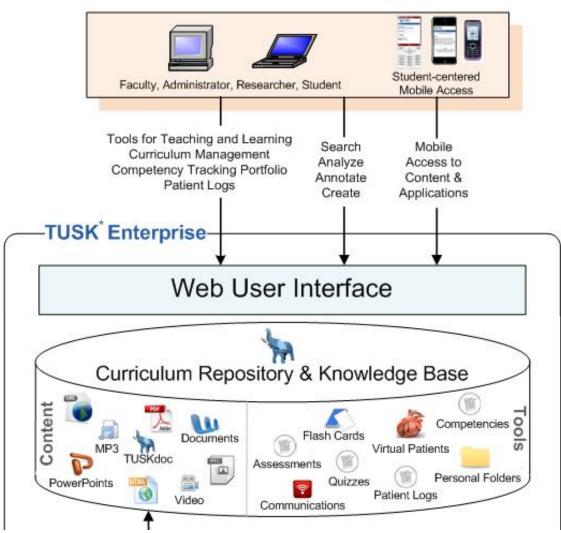
Track/assess learning and competencies
Make announcements
Create groups
Create discussion boards
Create interactive exercises reusing TUSK content
Manage assignments and grades
Create patient logs
Provide course evaluation
Highlight course learning objectives and keywords



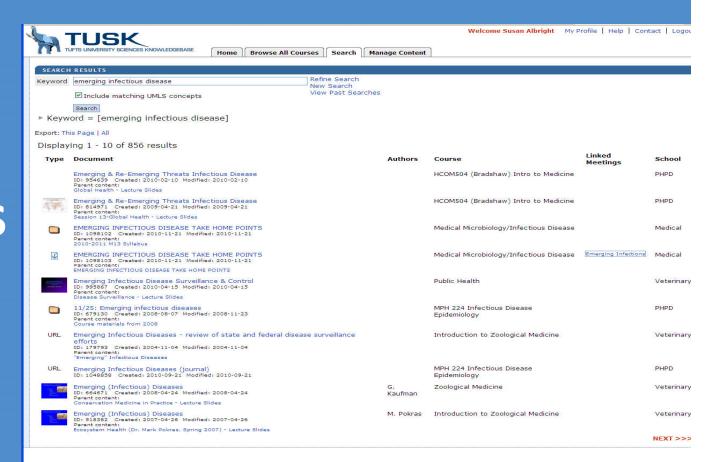


### TUSK to Build and Deliver One Health Curriculum

- Tailored content management shared repository
- Search, reuse, re-purpose
- Discussion across schools/disciplines
- Tracking competencies and mapping curricula across course/years and basic sciences/clinical









http://tusk.tufts.edu/view/course/Medical/1936/schedule/22936

Home Browse All Courses Search Manage Content

Refine Search New Search View Past Searches

☑ Include matching UMLS concepts

► Keyword = [avian flu] Concepts = ["Influenza in Birds"]

Export: This Page | All

Displaying 1 - 25 of 496 results

Туре	Document	Authors	Course	Linked Meetings	School
	Why are humans so rarely infected with avian flu yet so easily with human flu? ID: 884910 Created: 2009-10-20 Modified: 2009-10-20 Parent content: Respiratory Virus-Updated - Lecture Slides	K. Heldwein	Medical Microbiology/Infectious Disease		Medical
The Assessment of the Control of the	Why are humans so rarely infected with avian flu yet so easily with human flu? ID: 1048884 Created: 2010-09-17 Modified: 2010-09-17 Parent content: Viral Diseases II - Lecture Slides		Infectious Disease		Dental
The Assessment of the State of	Why are humans so rarely infacted with avian flu yet so easily with human flu? ID: 1045067 Created: 2010-09-16 Modified: 2010-09-16 Parent content: Viral Diseases II - Lecture Slides	K. Heldwein	Infectious Disease		Dental
The same of the sa	Why are humans so rarely infected with avian flu yet so easily with human flu? ID: 88491: Created: 2009-10-20 Modified: 2009-10-20 Parent content: Respiratory Virus-Updated - Lecture Slides	K. Heldwein	Medical Microbiology/Infectious Disease		Medical
The second secon	Why are humans so rarely infected with avian flu yet so easily with human flu? ID: 884557 Created: 2009-10-19 Modified: 2009-10-20 Parent content: Respiratory Virus - Lecture Slides	K. Heldwein	Medical Microbiology/Infectious Disease		Medical
The same of the sa	Why are humans so rarely infected with avian flu yet so easily with human flu? ID: 878932 Created: 2009-10-13 Modified: 2009-10-13 Parent content: Viral Diseases II - 10/13 updated - Lecture Slides	K. Heldwein	Infectious Disease		Dental
The same	Why are humans so rarely infected with avian flu yet so easily with human flu? ID: 877746 Created: 2009-10-09 Modified: 2009-10-09 Parent content: Viral Diseases II updated - Lecture Sildes	K. Heldwein	Infectious Disease		Dental
	Avian flu 10: 993216 Created: 2010-04-12 Modified: 2011-01-13 Parent content: Intro to Microbiology - 4-12-10 - Lecture Sildes	E. Pothos	PHRM211 - Translational Pharmacology		Sackler
URL	Avian Flu ID: 535331 Created: 2007-07-17 Modified: 2007-07-17 Parent content: Readings: Emergency Preparedness/ Course Review Pandemic Flu for Session 7 exercise		CMPH140 Public Health Theory to Practice		PHPD
	Avian flu  10: 993217 Created: 2010-04-12 Modified: 2010-04-12  Parent content: Intro to Microbiology - 4-12-10 - Lecture Slides	E. Pothos	PHRM211 - Translational Pharmacology		Sackler
Table 1	Avian Flu in Pigs ID: 651913 Created: 2008-03-28 Modified: 2008-03-28	L. Maranda	International Veterinary Medicine		Veterinar







### Chief Complaint - (PREVIEW)

Submit

You are working in a health clinic in the town of Siuna, a city of Nicaragua. As a volunteer, you wanted to assist local residents and see what life is like in other countries. Although you've only been here for a few days, the hospitality and friendliness of the Nicaraguan people is overwhelming. Many different people have come into the clinic seeking assistance. There have been locals that come in with the common cold, as well as tourists who have the stomach flu.

Today, a young coffee farmer from Coperna comes into your clinic after feeling sick for the past 10 days. He introduces himself as Jose and tells you that he's been feeling tired, his muscles ache, his joints are sore, and he's had a fever for the past few days. Unable to continue working, he decided to come to the clinic to get better.

What would you write down on Jose's chart as his chief complaint?

# **Case Studies**

Map of Nicaragua



Submit

Case Overview: The purpose of this case study is to gain a broad understanding of the biology, treatment, prevention and epidemiology associated with "fever in the field". Presenting with such a fever is often indicative of common infectious diseases that may occur in tropical

Objectives: After completing this case, the student should be able to distinguish malaria from other infectious diseases that may present with similar symptoms.

The student should have a general idea of the epidemiology of malaria.

The students should have a basic knowledge of the parisitology and pathophysiology of malaria in order to gain an understanding of how the infectious disease is transmitted and subsequently how this infection affects the body.

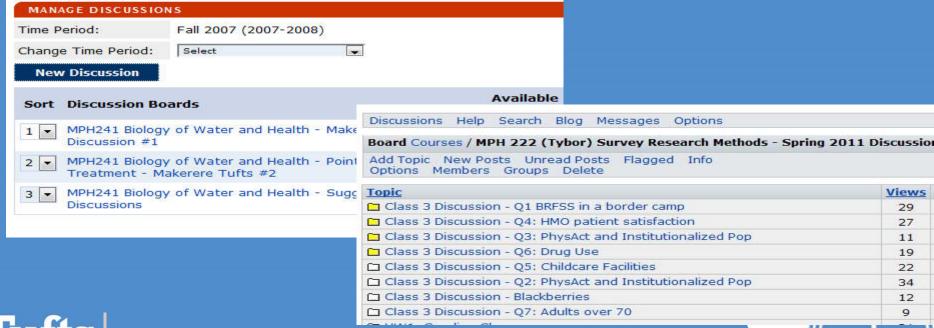
Understanding treatment options and preventative interventions are important components of erradicating present and future occurance of malaria. Students should be aware of such treatment plans and preventative measures.





Histology image used across three schools A1-1:DNA Get printable version Image size: Sm Med Lq XLq View document info Create Notes Nucleus View document info Create Notes PDF: 2 6 slides/page uon & Fast (een Feulgen Rxn View document info Create Notes PDF: 2 6 slides/page **Linked Documents** Document athors to Feulgen action showing 1) h Lipk natin, and 2) naller, more heterochr two types chromatin and what is the. Document Authors 1 уре Al-1: Nuclei, Liver, Feulgen R. A. W. Gustafson us only labe nuclei. Small quantities of nis technique. The reaction involves pre A1-1:DNA A. W. Gustafson A. W. Gustafson Liver Pigments A. W. Gustafson A3-1: Nuclei, Liver, Tol. Blue A. W PDF: 26 slides/page View document info Create Notes Linked Documents Document Authors A1-1:DNA A. W. Gustafson mk & Toluidine Blue A. W. Gustafson Light Micrograph of Liver T. F. Linsenmayer **Higher Magnification of Liver Cells** T. F. Linsenmayer

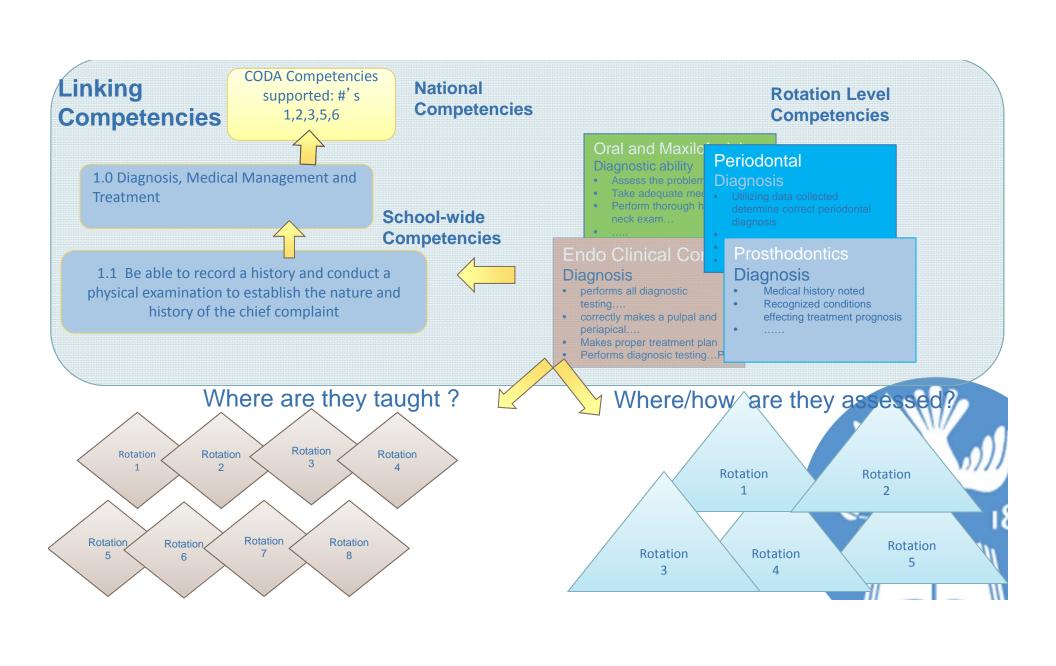
# Online Discussions Across Disciplines/Schools/Continents



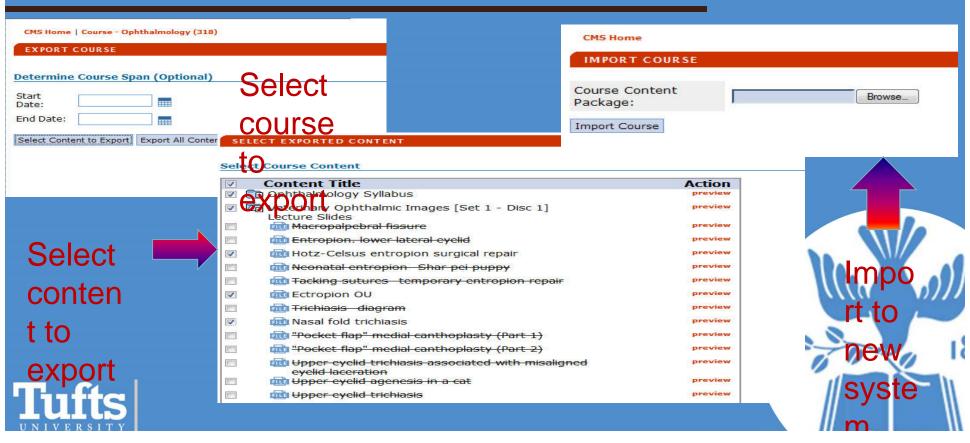


## School wide competency Page

tle D	Description	Type(s)	Actions	5
k a ir T v k r r	The graduate veterinarian must possess the basic knowledge of disease etiology and pathophysiology and tissue response to injury to practice independently.  The graduate veterinarian must understand the value of basic and clinical research in advancing knowledge of disease pathophysiology and tissue esponses to the practice of high quality veterinary medicine  The graduate veterinarian must be able to acquire and synthesize information in a scientific, critical and effective manner.		Modify   Add	Chile
Disease pathophysiology		Foundational knowledge and abilities	Modify   Add	l Chile
Disease etiology and transmission		Foundational knowledge and abilities	Modify   Add	l Chile
Normal structure and function of tissues		Foundational knowledge and abilities	Modify   Add	l Chil
Be able to evaluate the validity of claims related to benefits or advantages of products and techniques		Supporting competency and learning objective	Modify   Add	l Chil
Be able to regularly assess one's own knowledge base and seek additional information to correct deficiencies		Supporting competency and learning objective	Modify   Add	l Chil
Be able to list and prioritize causes of common medical and surgical diseases		Supporting competency and learning objective	Modify   Add	l Chil
Be able to describe the pathophysiology of common medical and surgical diseases and conditions		Supporting competency and learning objective	Modify   Add	l Chil
Be able to use current technology to retrieve and organize professional information from all sources		Supporting competency and learning objective	Modify   Add	I Chil



## **Share Content Across Schools**



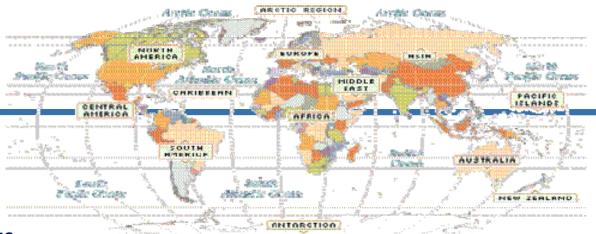
## Access in the Field via Mobile Phone

**Slide Collection** 



**Individual Slide** 





US hip Vice Rebhese Projection

University of Arizona

New York Medical College

U. Hawaii

**Einstein Medical School** 

University of Arizona

Tufts (Medical, Dental,

Vet,, Graduate Biological Sci's)

**Africa** 

Uganda

DRC

Kenya

Tanzania

Ghana

Ethiopia

Rwanda

### **Southeast Asia**

India

Vellore

Bangalore





## RESPOND (EPT)

Country	School – including at minimum SPH and Vet	Status
Uganda	Makerere University	In use
Democratic Republic of the Congo	University of Kinshasa University of Lubumbashi	French TUSK Installed - Trained
Rwanda	National University of Rwanda Umutara Polytechnic University	Servers being installed and training has just taken place
Ethiopia	Mikelle University Jimma University	Not Yet installed
Nairobi	University of Nairobi Moi University	Installation complete Training in progress



### Internationalization of TUSK





### **RESPOND Lessons Learned**

- OpenTUSK (the open source version of TUSK) is new
- Training targeted to use cases and local needs
- Work closely with Dean and faculty leadership to foster implementation
- Internationalization of software is an extremely complex process



## Challenge for the Future

- Pursue organization of universities using TUSK for local support and development
- Continue to work closely with Tufts and other TUSK-developing institutions for future development
- Pursue cloud-based software as a service



## Acknowledgements

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- Anonymous Foundation
- USAID | RESPOND
- The leadership at each of the Partner Schools and Universities
- OHCEA



### **Thank You!**

<a href="http://opentusk.org">http://opentusk.org</a> – for more information

Or contact tusk@tufts .edu



