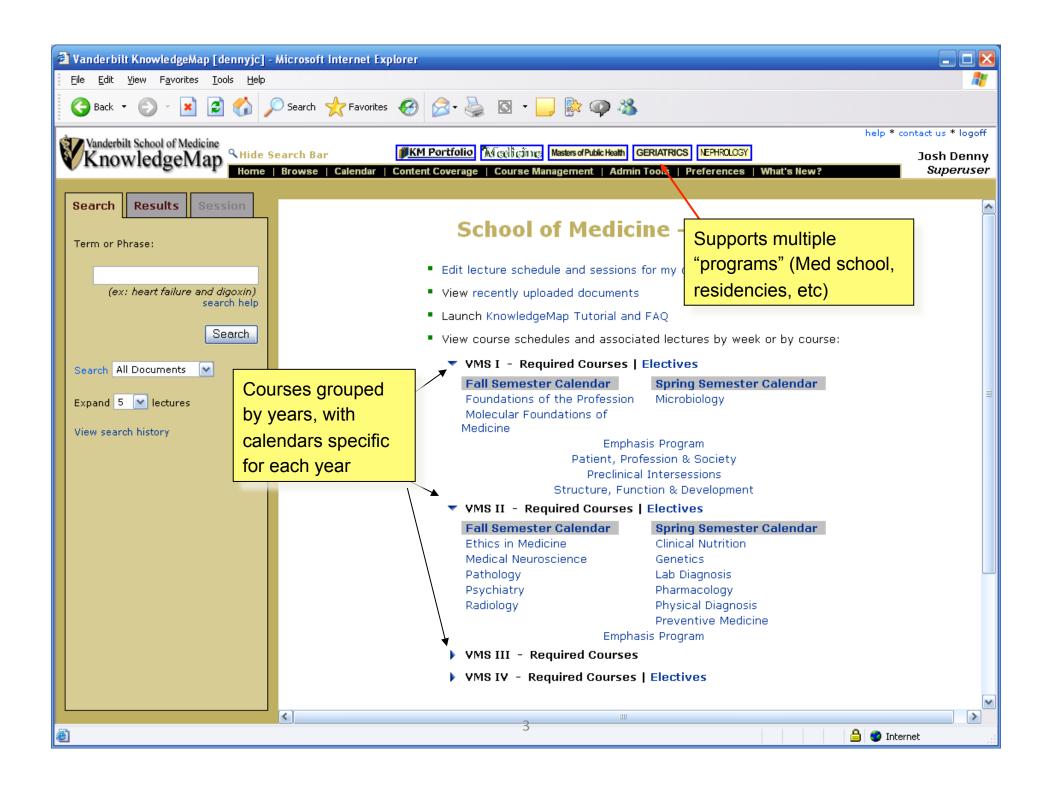
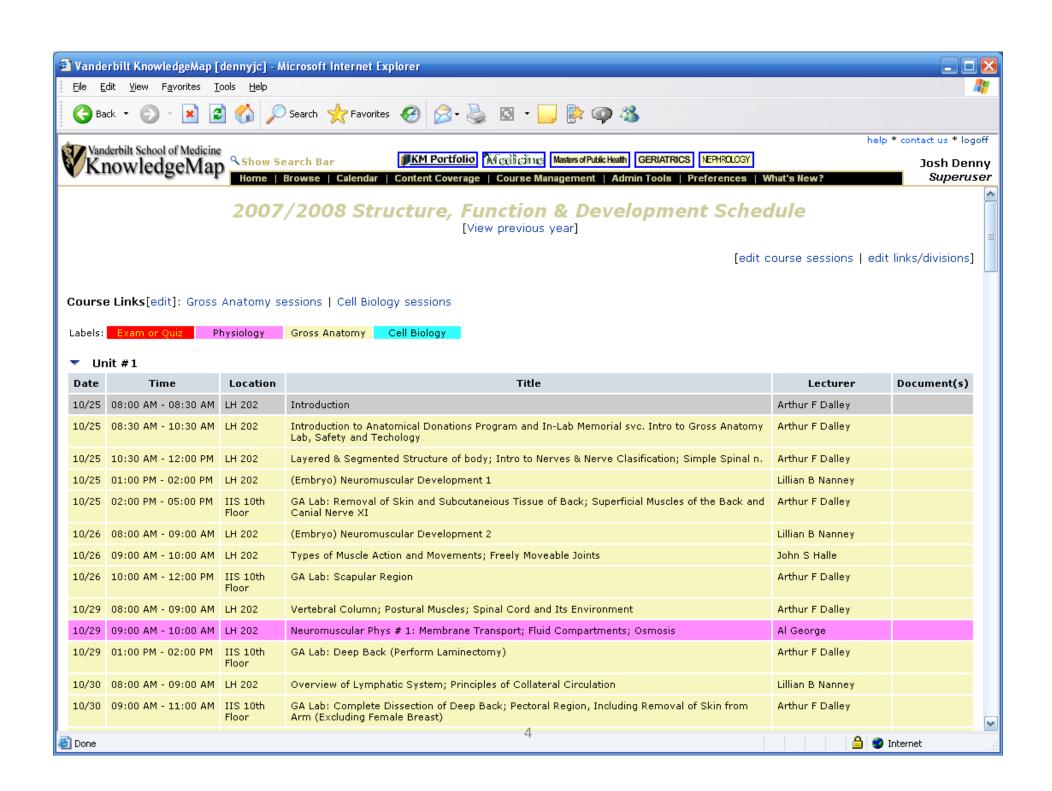
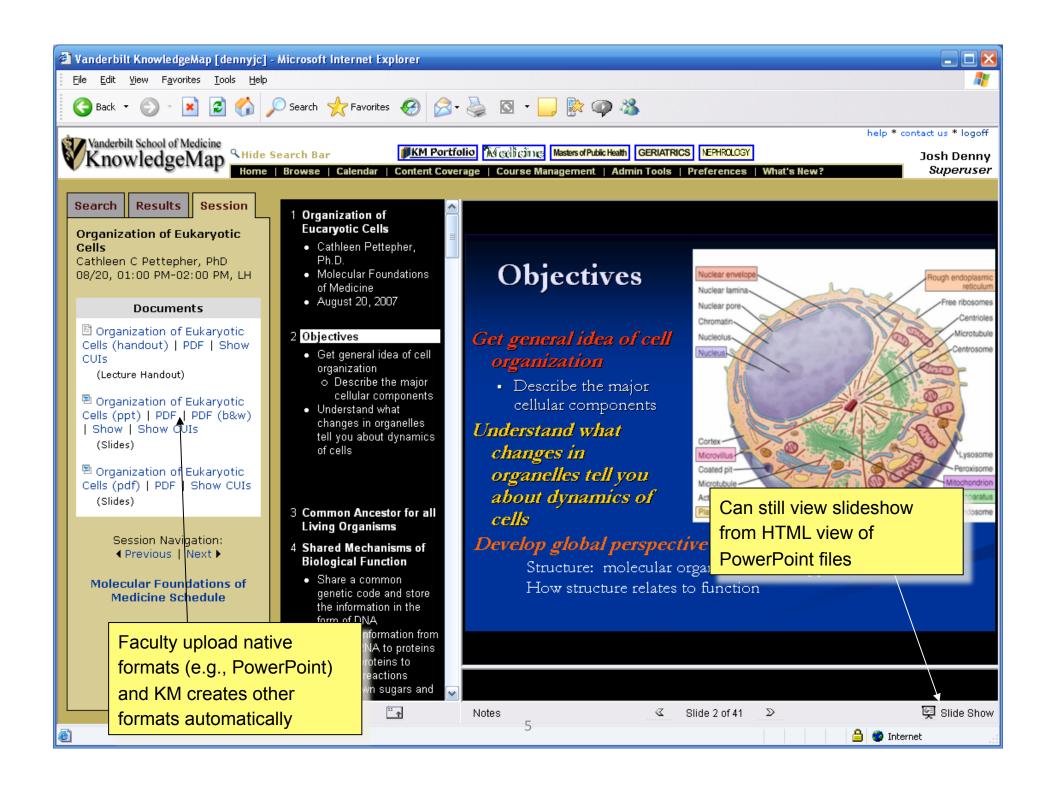
# Overview of KnowledgeMap and Learning Portfolio

## KnowledgeMap

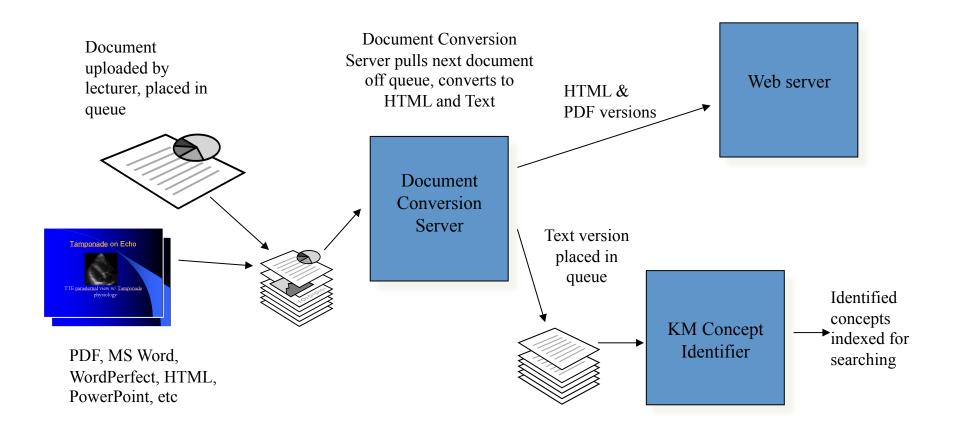
- A web based knowledge management tool
- Displays all the curricular documents
- Automatically locates all medical concepts in each lecture







## **Document Processing**



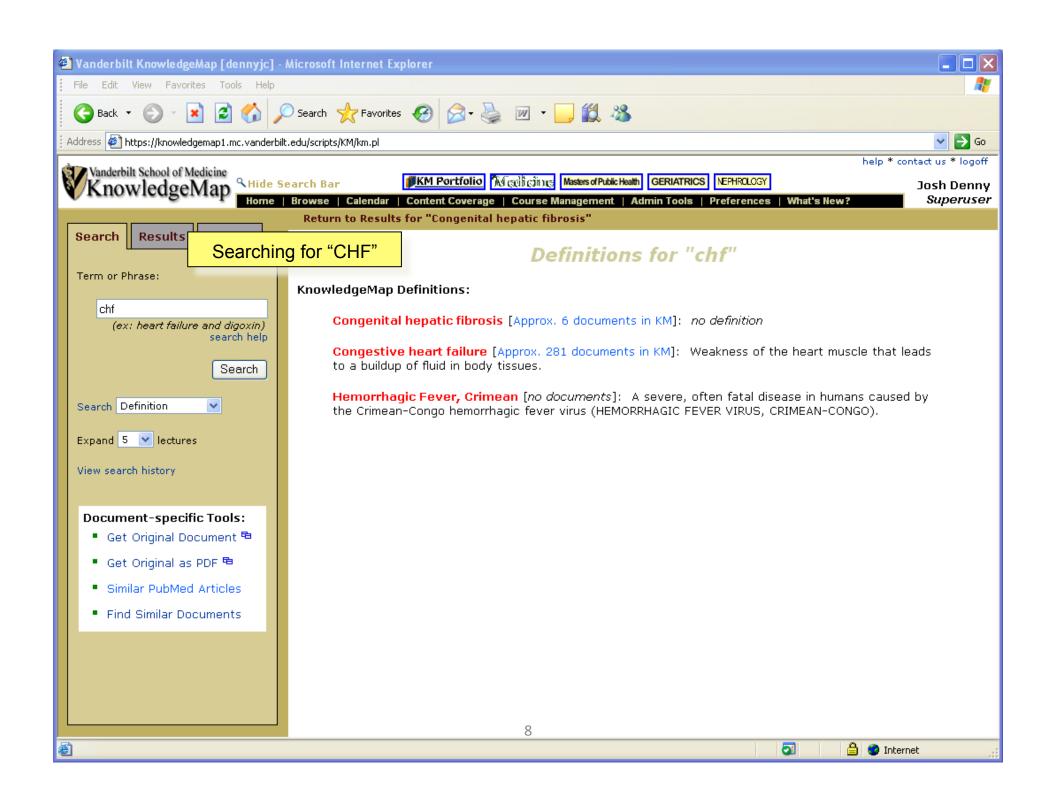
## Concept vs. Text indexing

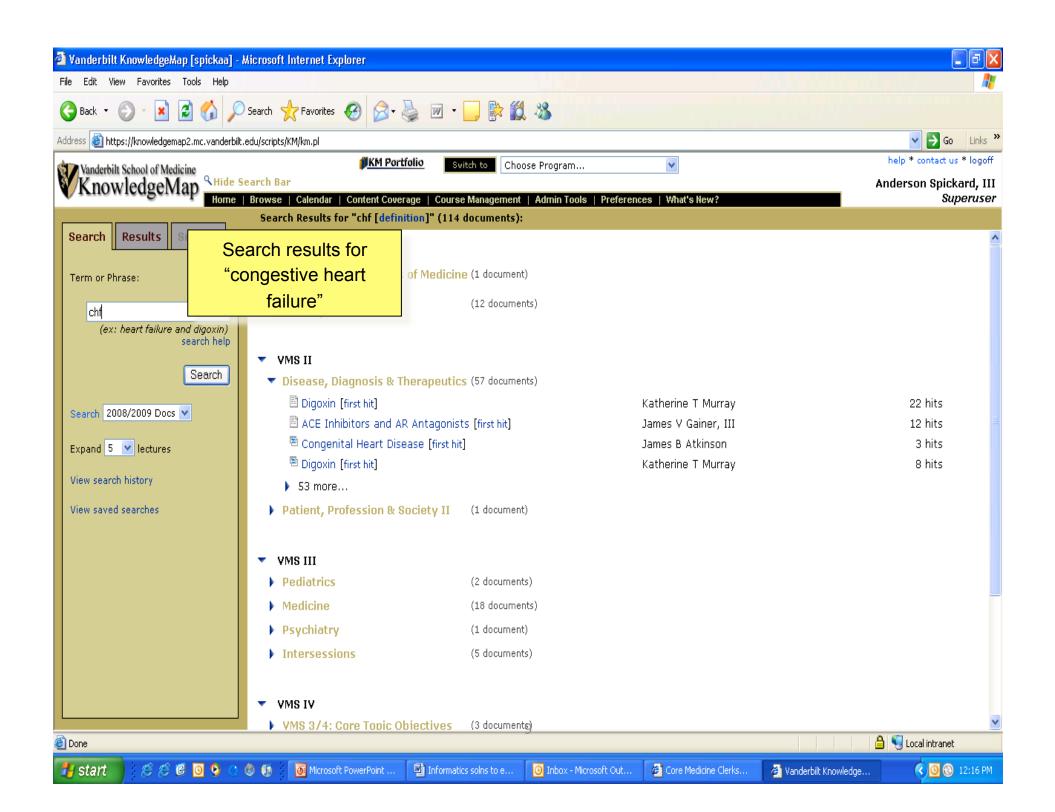
#### Text indexing

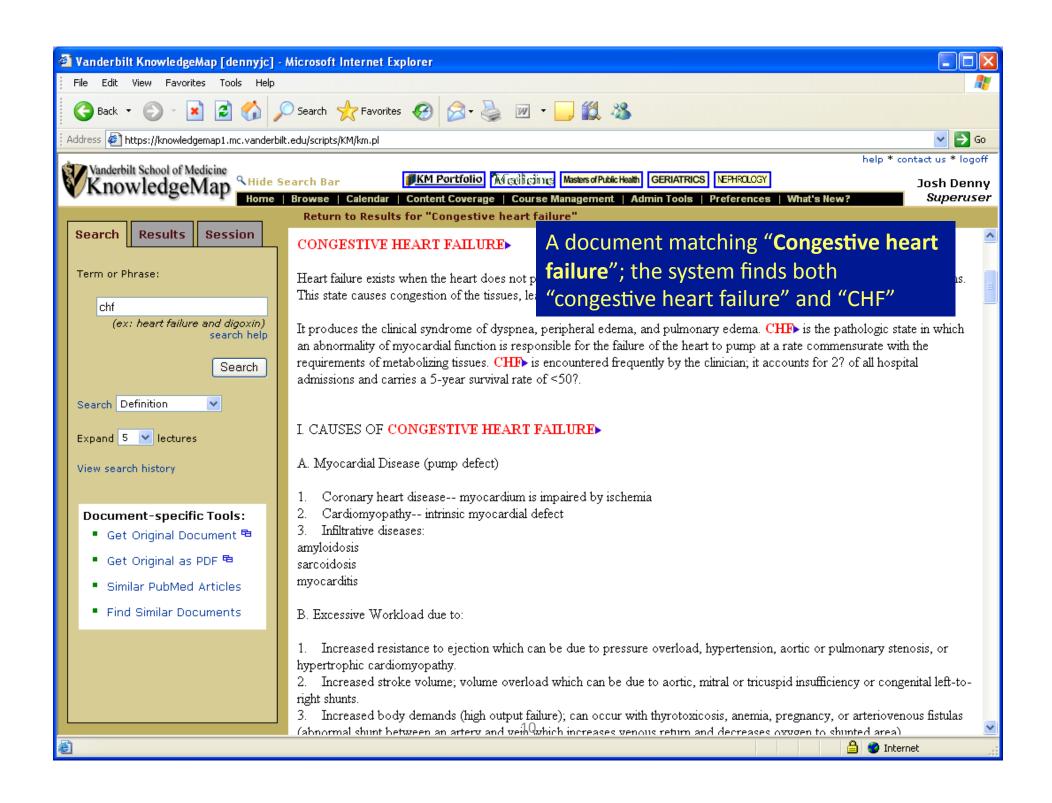
- Examples: Google, Yahoo
- Indexing by words of document
- "Hepatolenticular degeneration" ≠ "Wilson's Disease"

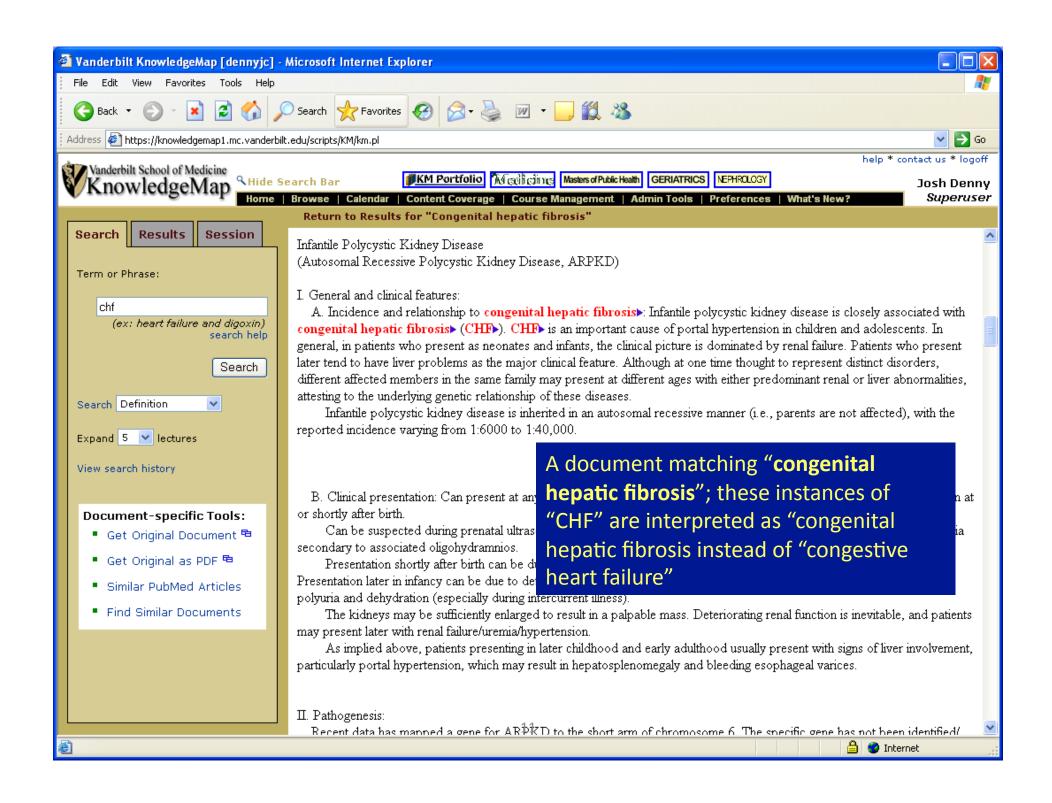
### Concept indexing – used in NLP systems like KM

- Indexing by "concepts"
- "Hepatolenticular degeneration" = "Wilson's disease"
- Recognizes words in document to a controlled vocabulary, such as the Unified Medical Language System (UMLS)
  - "CHF" → C00018802
  - "Congestive Heart Failure" → C00018802



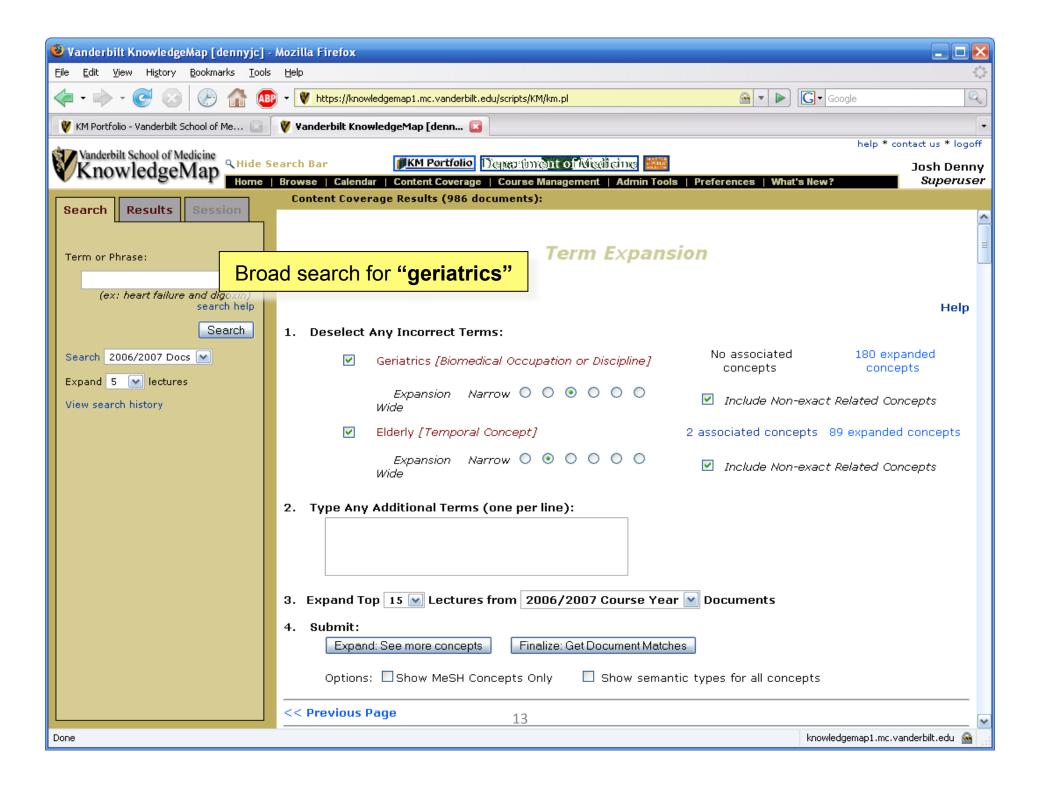


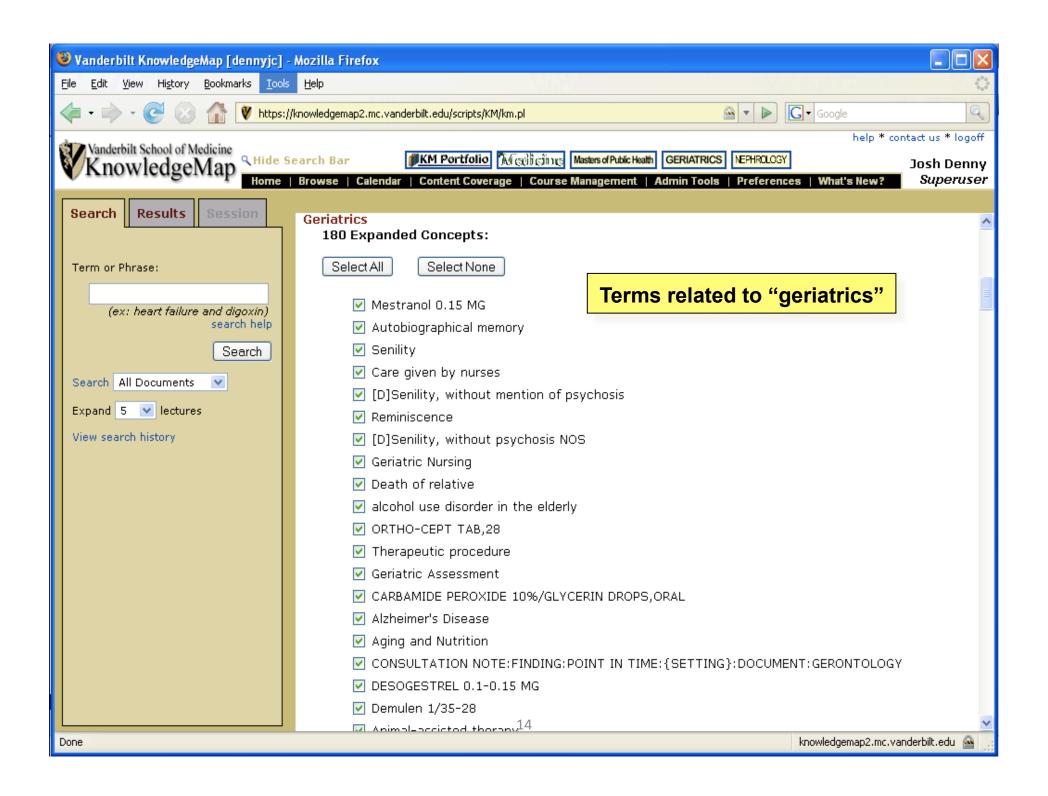


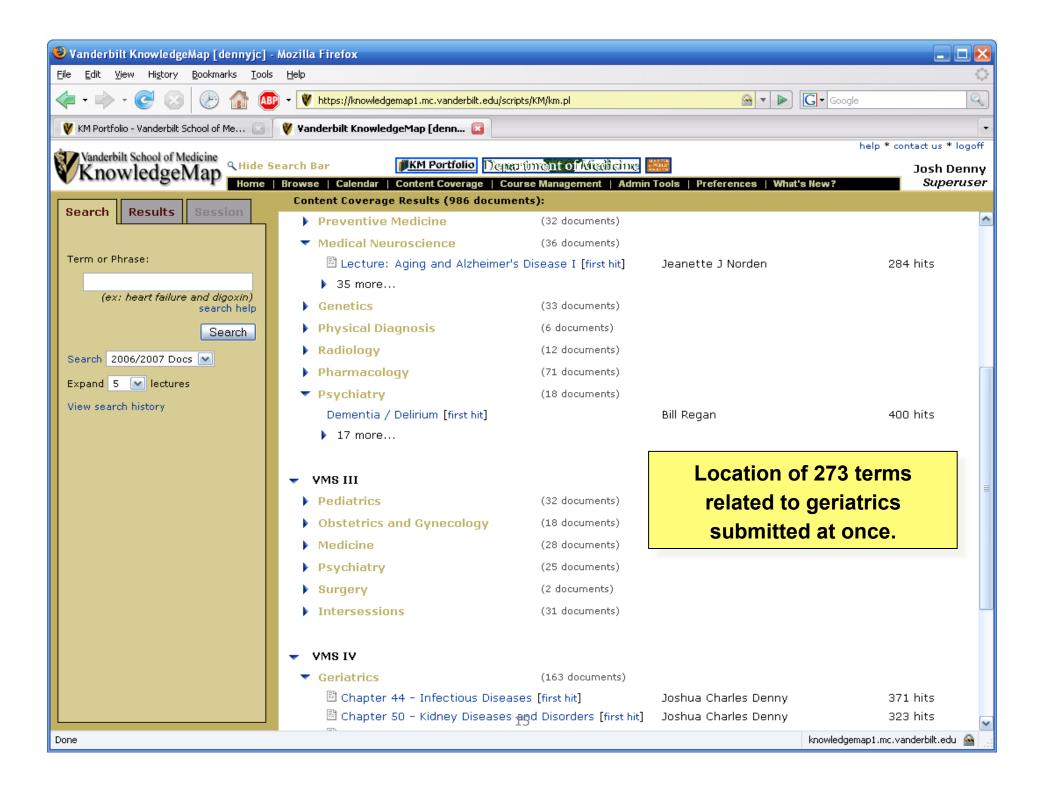


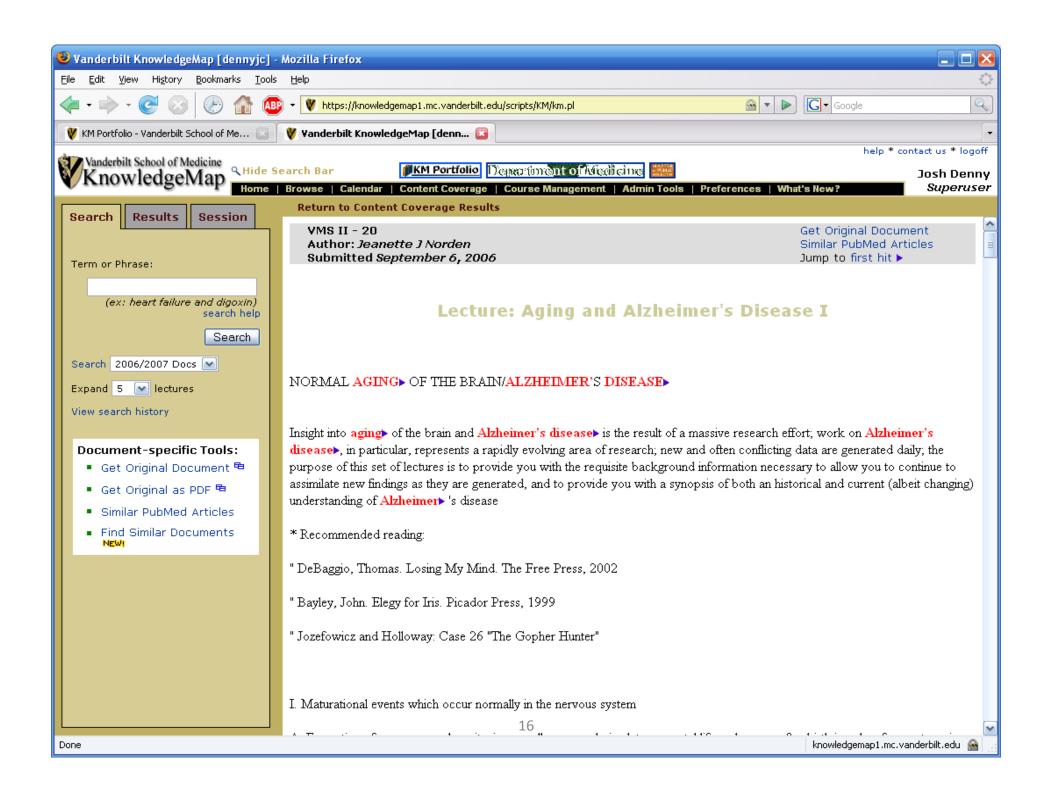
 What about a broad concepts like Geriatrics or Women's Health?

 What concepts represent Geriatrics and where are they covered in the curriculum?



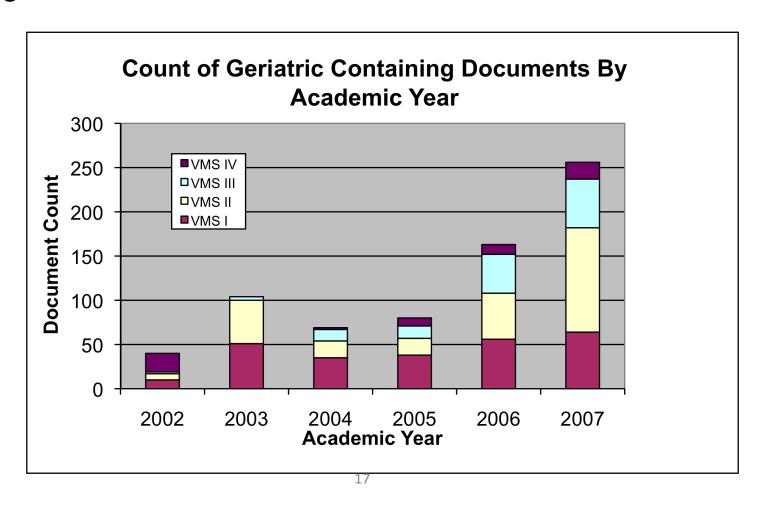






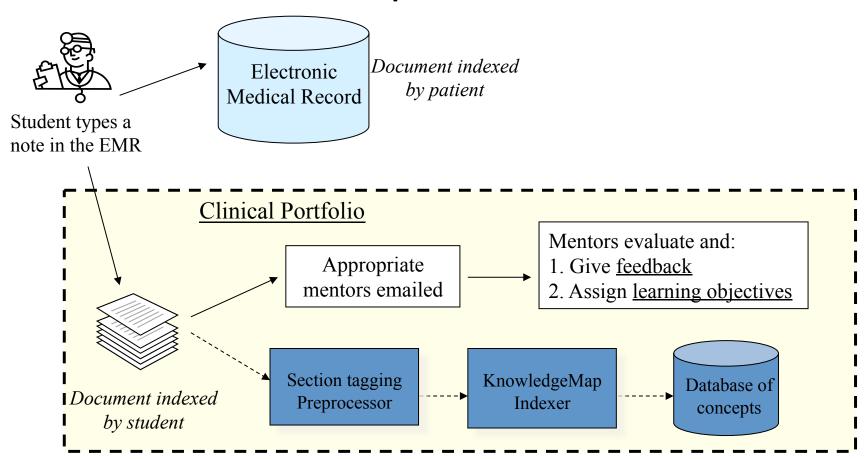
## Increasing Geriatric Content in Curriculum

 New initiatives: "intersessions" in third year, chronic care course, focused introductions of lectures in core classes, general VUSM focus for Geriatric education



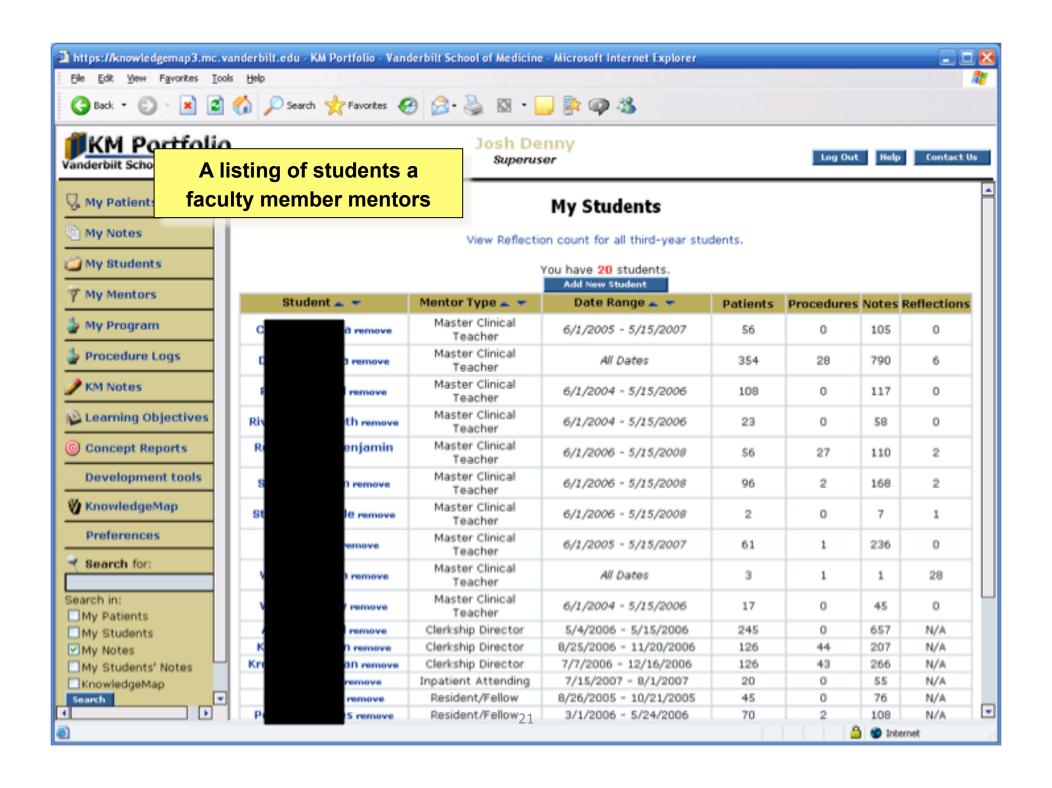
# KM Portfolio: Harnessing the Electronic Medical Record (EMR) for Education

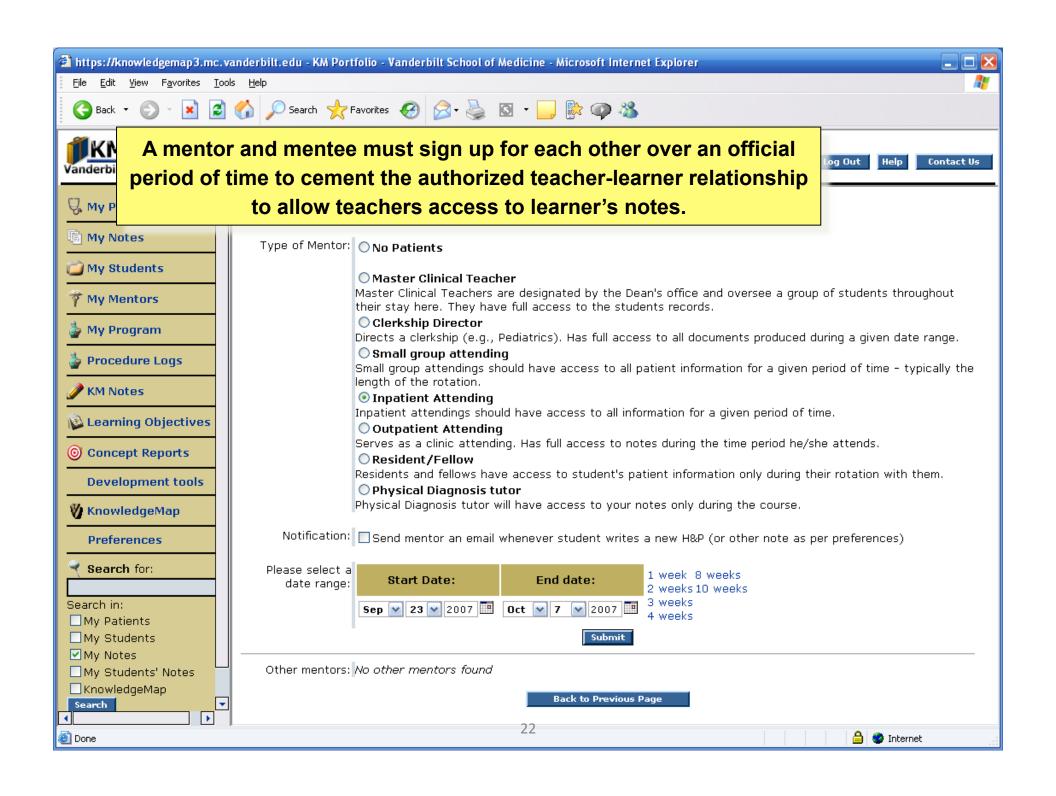
# One tack – leverage EMR to capture experience

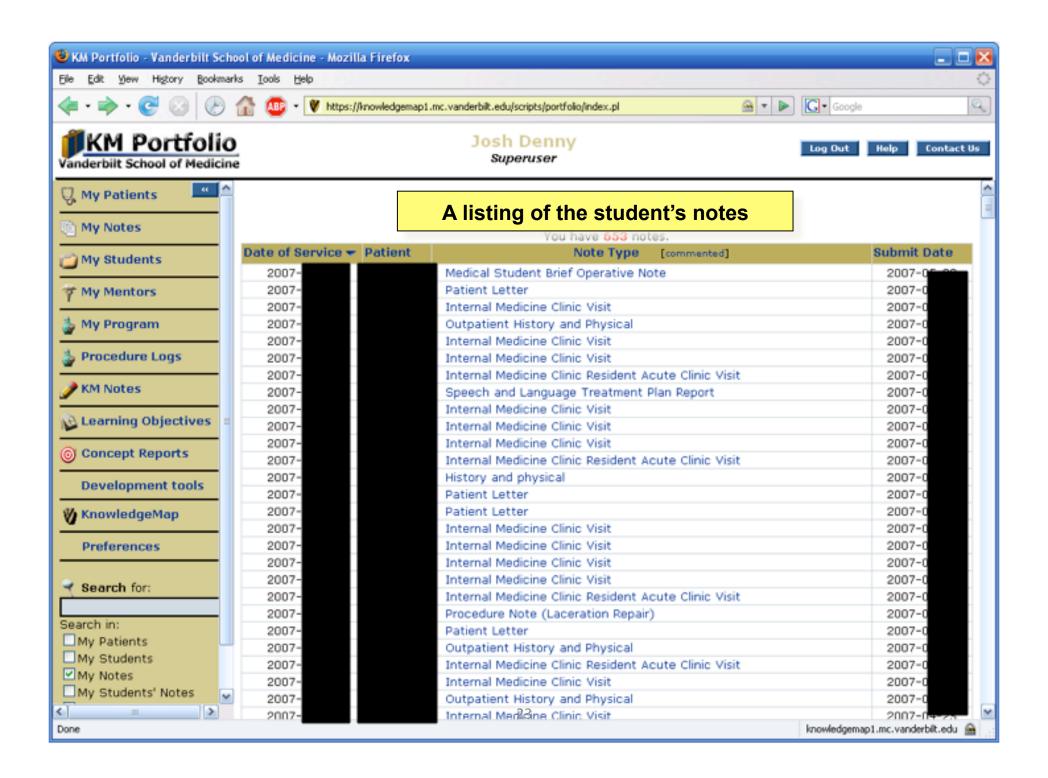


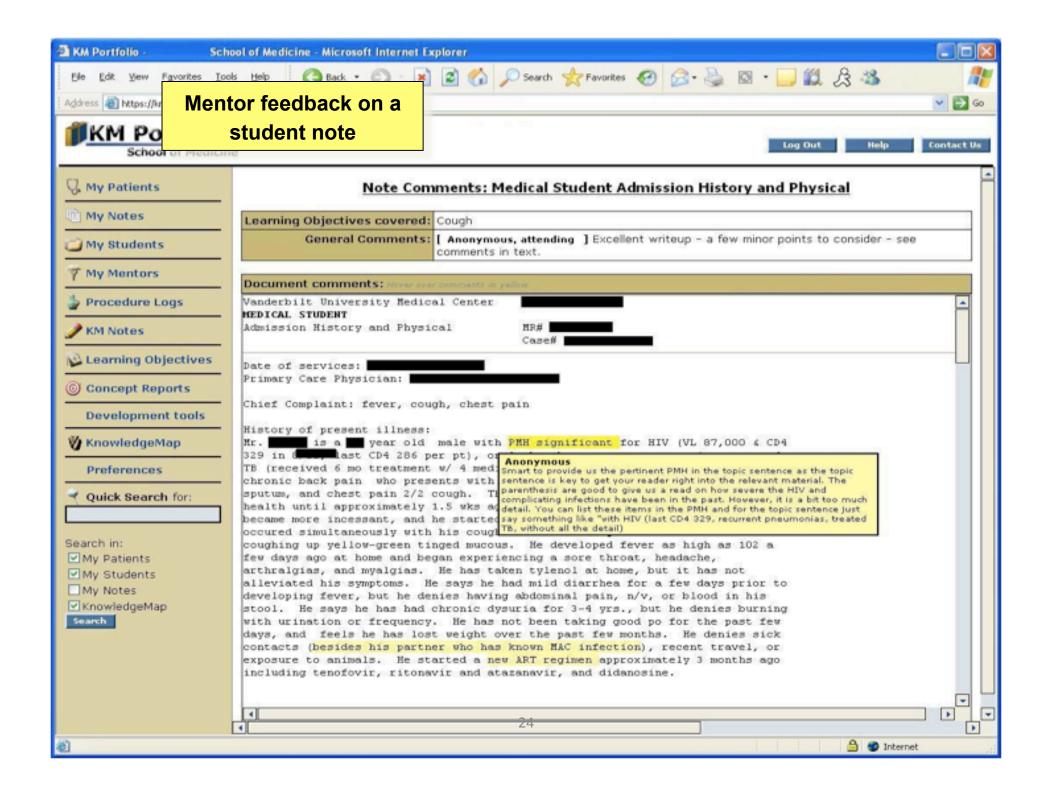
## Extracting "knowledge" from clinical notes

#### **H&P** entered by user CC: SOB HPI: This is a 65yo w/ h/o **Clinical Note** CHF, ... no chest pain **Section Tagger** <chief complaint> **SOB** </chief complaint> <history present illness> This is a 65yo w/ h/o CHF.... Denies **Structured Output** chest pain. Text labeled with Unified Medical </history present illness> Language System concepts, organized by section <chief complaint> C0392680: Shortness of Breath KnowledgeMap </chief complaint> **Concept Identifier** <history\_present\_illness> **C0018802: Congestive Heart Failure** C0008031: Chest Pain, Negated </history\_present\_illness>









#### RCT evaluation of mentor feedback on student notes

### Survey of Residents and Attending physicians

Compared with prior rotations:	Electronic	Paper	р
"I reviewed more notes"	40%	12%	0.014
"I provided more feedback"	40%	12%	0.010
"I was more satisfied with feedback given"	33%	10%	0.045

## Analysis of student write-ups

- Evaluated 142 write-ups using 13-point rating scale
- Performance on "Assessment and Plan" ratings improved in electronic feedback group (p=0.036)

J Gen Int Med. 2008;23(7):979-84

