

# Information Mastery: A Practical Approach to Practicing and Teaching Evidence-Based Medicine

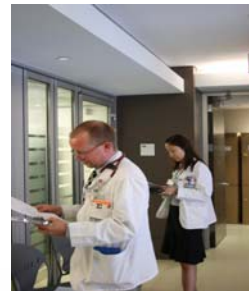
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Tufts Health Care Institute  
Tufts University School of Medicine  
November 12-14, 2009  
Boston, Massachusetts

## Information Mastery/EBM Theme at Tufts



Scott Epstein, MD.  
Professor of Medicine  
and Dean for  
Educational Affairs at  
Tufts University School  
of Medicine



**Tufts**  
UNIVERSITY

School of Medicine

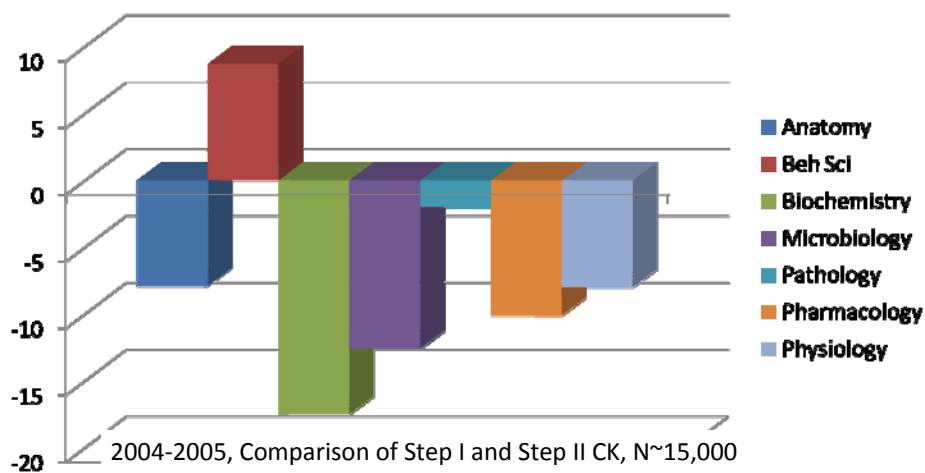


## Knowledge Loss in Basic Science

- Univ of Saskatchewan
- 24 graduating students
- 20 MCQ from their 1<sup>st</sup> yr Neuroanatomy Course (20% diag of brain section)
- 1<sup>st</sup> year course: 58 hrs lecture/lab. Each lecture a different structure (eg, thalamus)
- **Original: mean 82% (range, 68-95%)**
- **Retest: mean 33% (range, 10-55%)**

Mateen and D'Eon, Med Teac 2008; 30(5):537

## Poor Retention of Basic Science Knowledge



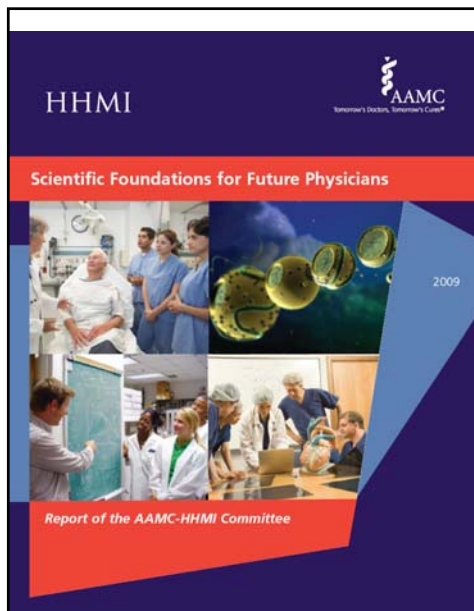
Ling et al, Acad Med 2008;83:S82

## Training of physicians for the twenty-first century: Role of the basic sciences

JOSEPH P. GRANDE

Mayo Medical School, College of Medicine, Mayo Clinic, USA

The basic sciences will continue to have a fundamental role in the development of physicians of the twenty-first century. However, basic science faculty need to acknowledge the fact that **it is simply impossible to impart all of the “knowledge” that is needed to practice medicine, and should make no attempt to do so.** Physicians need to be well versed in the scientific method – **they need to know how to formulate questions, develop testable hypotheses, and define a line of investigation to prove or refute the hypotheses. Basic science faculty should facilitate the development of problem solving skills** – this requires close interaction with clinical colleagues to formulate clinical questions that require application of basic science principles.



Recommend specific **competencies** in the sciences fundamental to medicine that all medical students should demonstrate before receiving the M.D. degree.

The desired outcome of the medical education process should be **scientifically inquisitive and compassionate physicians** who have the **motivation, tools, and knowledge to find the necessary information** to provide the best and most scientifically sound care for their patients.

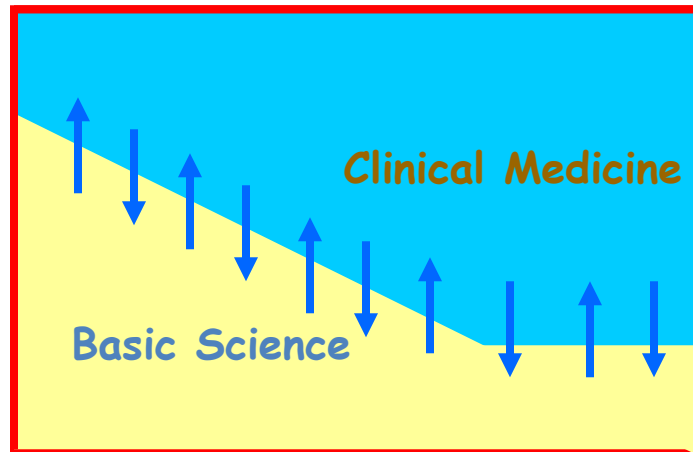
## **Educating Physicians: A Call for Reform of Medical School and Residency (Carnegie Foundation for the Advancement of Teaching)**

- Recommendations based on team's four-year study
- Visited 14 medical schools, extensive review of literature in fields of medical education and learning sciences.
- Overall aim: prepare physicians for a lifetime of practice.
- **Four major recommendations** will call on medical schools to:
  - **Shift focus from educational process to learning outcomes and individualized learning (PBL, TBL, Blended, Sim)\***
  - Integrate different types of learning, knowledge and professional roles
  - Train students to insist on excellence across the range of their professional activities
  - Focus on formation/develop students' professional identities.

\* 30-50% knowledge loss from classroom to clinic

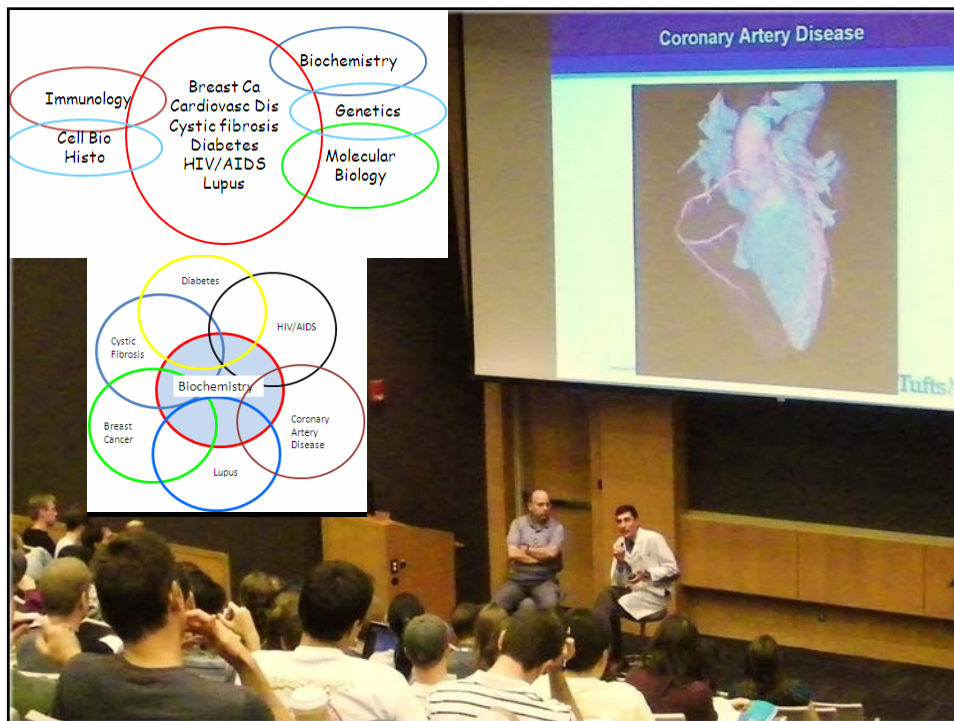


# Tufts - Translational Education



Years 1-2

Years 3-4



# Overview Years 1-2

## Year 1

<b>MedFound I</b> (11 weeks) Biochemistry, Mol Bio, Cell Bio, Genetics, Immunology	<b>MedFound II</b> (11 weeks) Anatomy, Core Physiology, Core Pharmacology, Core Pathology	<b>The Brain</b> (7 weeks) Neurosciences, Psychopath, Addiction Med, H&N Anatomy	<b>SBM</b> (4 wks)
Epidemiology/Biostats, Evidence Based Med, Problem Based Learning			
Foundations of Patient Care (Interviewing, Phys Dx, Preceptorship I)			
Key Themes			

## Year 2

<b>Health to Disease</b> (27 weeks) I - Cardiovascular, Pulmonary, Renal II - Heme/Onc, Micro, ID, Rheumatology, Dermatology III- Endocrine, Reproductive, GI, Nutrition	Spring Break	USMLE Prep	Vacation	Clerkships
Integrated Case Based Learning				
Foundations of Patient Care (Preceptorship II)				
Key Themes				

SBM = Social & Behavioral Medicine

# Longitudinal Key Themes are Integrated Across 4 Years

- Community Service & Active Citizenship
- Compassionate Care
- Culture Competency
- Ethics/Professionalism
- **Evidence-based Medicine/Information Mastery**
- Life Cycles (Pediatrics to Geriatrics)
- Patient Safety & Quality
- Physician Well-Being
- Population Medicine/Health Care Delivery Systems

## First Year EBM Course

- [How doctors think?](#)
- [A Doctor Thinks Out Loud What's The Evidence?](#)
- [Where in the world are primary data sources?](#)
- [How Do I Interpret This Test?](#)
- [Deciding When The Buck Stops With You](#)
- [Critical Aortic Stenosis & Recurrent GI](#)
- [Deciding About Drugs](#)
- [It's Just A Guideline](#)
- [How to Trash an Article](#)