

## Annual Workshop in Clinical Education

Our mission:  
 to foster collaboration  
 across specialties to  
 promote excellence in  
 clinical education

AAMC October 31, 2006  
 Seattle, Washington

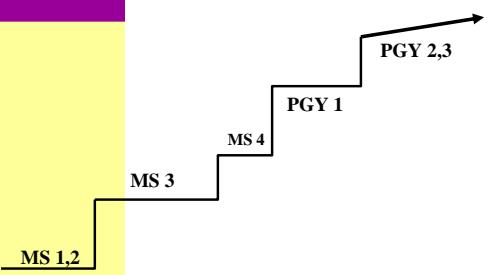
## Implementing Longitudinal Themes in Medical Education

- Stephen Leapman, M.D. Association for Surgical Education
- T. Robert Vu, M.D. Clerkship Directors in Internal Medicine
- Richard Usatine, M.D. Society of Teachers of Family Medicine
- Maya Hammoud, M.D. Association of Professors of Gynecology and Obstetrics
- David Lee Gordon, M.D. Consortium of Neurology Clerkship Directors
- Robin Deterding, M.D. Council on Medical Student Education in Pediatrics
- Martin Leamon, M.D. Association of Directors of Medical Student Education in Psychiatry
- Thomas Painter, M.D. Clerkship Directors in Internal Medicine

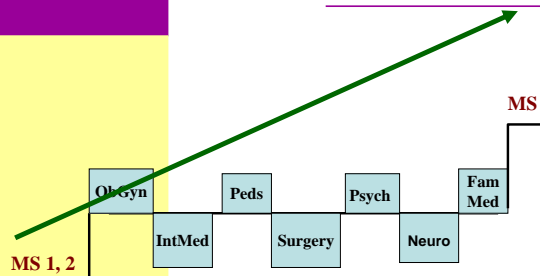
## Topics and Agenda

- content: themes in their clerkships and schools, core curricula and syllabi
- methods: bridge sessions, intersessions, colleges, streaming of themes through clerkships
- format:
  - seven minutes per speaker
  - 20-30 minutes for group discussion

## Horizontal across time




## The mini-acceleration of training



## One ACE goal:

collaboration, communication, and  
 resource sharing among educators in  
 different clinical disciplines, including  
 a multidisciplinary approach to core  
 competencies for medical students

## An Undergraduate Competency Curriculum at *Indiana University School of Medicine*



**Stephen B. Leapman, M.D. (ASE)**  
**T. Robert Vu, M.D. (CDIM)**

## Background


- **1999: Indiana University School of Medicine (IUSM) implemented a competency-based curriculum**
- **Nine competencies:**
  - Effective Communication
  - Basic Clinical Skills
  - Using Science to Guide Diagnosis, Management, Therapeutics, & Prevention
  - Lifelong Learning
  - Self-Awareness, Self-Care, & Personal Growth
  - Social & Community Contexts of Health Care
  - Moral Reasoning & Ethical Judgment
  - Problem Solving
  - Professionalism & Role Recognition

## Tracking Clinical Skills and Patients


- **The Need:**
  - LCME ED-2 (quantified criteria for types of patients)
  - LCME ED-31 (early evaluation to allow remediation)
- **Students required to have P.D.A.**
- **All students required to log clinical skills, patients, and competency events**

## The Technology

1. Software: Pendragon Enterprise edition
2. Web-based entry/reporting application
3. Student enters data on a handheld device, upload to central server
4. Provides real-time web-based reporting
5. Preceptor signature image captured.



## Utility of the Program




Basic Procedure	Missed	Required	Completed
Abdomen Exam	4	0	0
Abdominal Wall Wound	2	2	2
Abdominal Wound Repair	1	1	1
Break Pathology	3	0	0
DrUG/Pharmacology/Treatment	1	1	1
ET/ECG	2	2	2
Fluid, Electrolyte and Acid Base Chemistry	3	0	0
U/L Lab/Practice Pathology	3	0	0
HCP/Health Care Team/Health Care Work-up/Treatment	1	1	1
Transfusion Considerations	1	1	1
Trauma	2	2	2
Wound Complications	2	2	2

Basic Procedure	Missed	Required	Completed
Abdominal monitoring	0	1	1
Blind drain	0	0	0
Central venous catheter insertion	0	1	1
EGD / colonoscopy	0	1	1
Foley catheter insertion	0	2	2
Regional anes.	0	1	1
Respiration (oral, nasal, intub.)	0	1	1
Urinary cath	0	0	0
Wound/skin insertion	0	0	0
Wound/skin debridement	0	1	1
Wound/skin repair	0	1	1
Wound/skin repair (de. observed)	0	0	0
Wound/skin repair	0	2	2
Suture of wound	0	2	2
Total general anesthesia	0	1	1
Wound/skin measurement	0	1	1


## Results

- **General Surgery (251 students)**  
7419 surgical encounters (29/student)  
5175 clinical skills (20/student)
- **3rd year (278 students)**  
202,119 total encounters/ diagnoses  
61,738 total procedures  
138,681 forms completed and uploaded




## Conclusion


- **Data evaluates training of students , monitors experiences, provides information of the teaching environment**
- **Centralized system necessary because of mobile encounters and timely review.**



## An Undergraduate Competency Curriculum at *Indiana University School of Medicine*

- **Nine competencies: (implemented 1999)**
  - I. Effective Communication
  - II. Basic Clinical Skills
  - III. Using Science to Guide Diagnosis, Management, Therapeutics, & Prevention
  - IV. Lifelong Learning
  - V. Self-Awareness, Self-Care, & Personal Growth
  - VI. Social & Community Contexts of Health Care
  - VII. Moral Reasoning & Ethical Judgment
  - VIII. Problem Solving
  - IX. Professionalism & Role Recognition





## How are we teaching & evaluating professionalism at IUSM?

- **Evaluation:**
  - Assessed in each clerkship
  - Progress summary: competency transcript
- **Teaching:**
  - **Failure:** discussing paper/hypothetical cases
  - **Success:** focusing on the informal/hidden curriculum
    - Effectively captured via *reflective journaling*
    - End-of-clerkship surveys & evaluation forms of clinical teachers have limitations



## Professionalism Journal

- Occurs during Medicine Clerkship
- **Web-based & password-protected**
  - Complete confidentiality
  - Only clerkship director & administrative staff have complete access
- Students invited to contribute → framing instructions.... *“be observant—look for role models”*
  - Heighten awareness of professionalism issues
  - Promote self-reflection → mindfulness
- Monthly small group reflection & discussion of journal entries (de-identified & edited) with faculty facilitator

**Professionalism Journal**


[Utilities](#) > [Submissions](#) > Review submission by Medical Student John Doe on 5/2/2004 7:38:12 PM

**1 Check all that apply**

- Altruism
- Responsibility and Accountability
- Excellence and Scholarship
- Respect
- Honor and Integrity
- Caring, Compassion, Communication
- Leadership
- Knowledge and Skills

**2** Describe what you have observed and/or experienced. Be sure that your description is HIPAA-compliant (i.e., do not include any information that could potentially disclose the identity of a patient). Also do not disclose the identity of anyone else involved (nurses, attendings, interns, etc.) in the incident described. Next, reflect on this incident and decide whether the behavior/action you observed was effective, how you might have responded under the same circumstances, what you learned from this incident, and/or any other thoughts you had during the situation.

*I saw a patient in clinic who has had hyperlipidemia since 2002 and has not received treatment for this condition—it had been overlooked. My attending then said, 'That's my fault. Thanks for catching my mistake.' We started her on simvastatin that day. I was impressed at the responsibility my attending had taken in admitting his own mistake. He could have easily told me any number of reasons why the patient was not being treated. His candor was very impressive.*



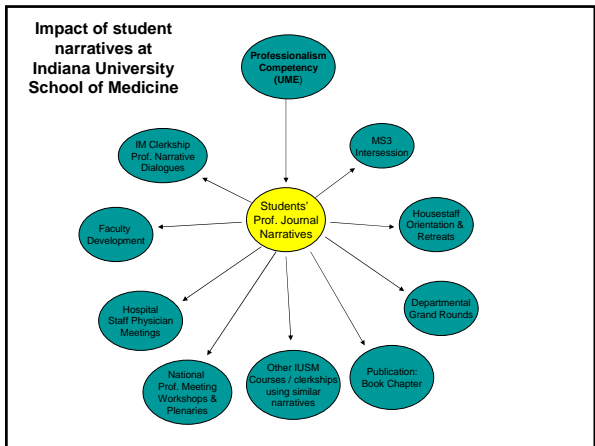
## Journal Excerpt from Class of 2005

I was taking care of a patient admitted for severe abdominal pain, nausea, and diarrhea due to a Crohn's flareup. ...

## Journal Excerpt from Class of 2005 ACE

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Our team & the ICU team were rounding and we all entered a patient's room. There were at least 15 of us in the room...



## Models of Longitudinal Curricula ACE

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- Doctoring
- College Models
- Inter-sessions between clerkships
- Longitudinal clerkships

Richard P. Usatine, MD  
Professor and Vice Chair  
Department of Family Medicine  
University of Texas HSC San Antonio

## Integration ACE


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- The integration of basic, clinical & social sciences is essential to clinical practice and research in the future.
  - Interdisciplinary courses & clerkships
  - Integration as part of all 4 years
  - Design, implementation, and evaluation by multidisciplinary teams

## New Year 3 Clinical Core 2000 ACE

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- 2-week Clinical Foundations
- Integrated clerkships
  - Neurology/Psychiatry
  - Family Medicine/Internal Medicine
  - Surgery/Anesthesiology/Ophthalmology
- On campus orientation of 1-5 days
  - Essential physical exam skills
  - Case studies and lectures
- Longitudinal elements
  - Doctoring 3
  - Career Preceptorship
  - Radiology




PDA:  
Web Log  
Eprocrates  
MedMath  
Avant Go

## Academic Colleges: A New Year 4 in 2001 ACE

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- A curricular structure to...
  - Update new scientific and medical findings relevant to specific careers
  - Enhance clinical skills & reasoning
  - Provide individual feedback
  - Control elective system
- A society of faculty and students to...
  - Provide career advising and mentoring
  - Promote habits of inquiry



## Topics Covered in Doctoring Style Longitudinal Curricula

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- Professionalism
- Ethics and law
- Health promotion and disease prevention
- Public health and community medicine
- Clinical decision-making
- EBM and analysis of the medical literature
- Cost containment

## Diseases of the Curriculum

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- ◆ Curriculosclerosis
- ◆ Curriculoarthritis
- ◆ Curriculomegaly

## Goals of Doctoring 3

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- Reinforcement of knowledge, skills, and attitudes developed in Doctoring 1 and 2
- Introduce students to curricular content areas that have been inadequately taught in the traditional clerkship-based curriculum

## Content by Year in a Longitudinal Curriculum

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	Year 1	Year 2	Year 3
Evidence based medicine	→	→	⇒
Health care financing	→	→	⇒
Cost issues	→	→	⇒
Prescribing practices	→	→	⇒
Legal issues	→	→	⇒
Chronic illness	→	→	⇒
Ethics	⇒	⇒	⇒
Behavioral aspects of medicine	⇒	→	→

## Doctoring 3 Structure

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- Longitudinal course comprising 10% of curricular time in the third year
- Components- one day every 2 weeks
  - half day small group sessions with 8 students and 2 faculty in am
  - half day clinical continuity experience in pm

## Longitudinal Experiences of Primary Care College

ACE

- Clinical experiences in the community including:
  - Student-run clinics
- Doctoring 4 (medical education experience)
- Evening dinner seminars on women’s health, sports medicine, adolescent health, International health, health care for the homeless, learning to teach

ACE

# Association of Professors of Gynecology and Obstetrics (APGO)

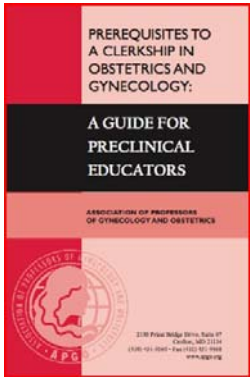
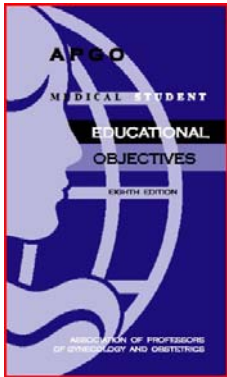
Maya M. Hammoud, MD  
University of Michigan

ACE

# Longitudinal Themes

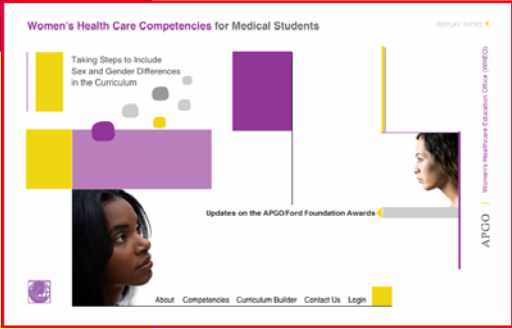
- APGO
- University of Michigan Medical School

## APGO Learning Objectives


ACE

## APGO Curriculum Builder



ACE

## APGO Curriculum Builder



ACE

## UMMS

- Curriculum: Defined learning objectives and skills, integrated through all 4 years
- Tracked through the students' learning and tracking portfolio
- Regular Meetings of Curriculum Committee and Clerkship Directors
- "Longitudinal" evaluation forms

ACE

## UMMS Clinical Evaluation Form

Needs attention

**13. OVERALL CLINICAL PERFORMANCE**

1	2	3	4	5	6	7	8	9
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SCALE CHANGES

**14. History Taking and Physical Examinations**

Overall, this student is currently functioning at this level:

Not yet ready for MD Year	Early MD year	Mid MD year	Late MD year	MD Subintern	Intern
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**15. Clinical Judgment and Decision Making**

Overall, this student is currently functioning at this level:

Not yet ready for MD Year	Early MD year	Mid MD year	Late MD year	MD Subintern	Intern
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please list the student's strengths (optional):

ACE

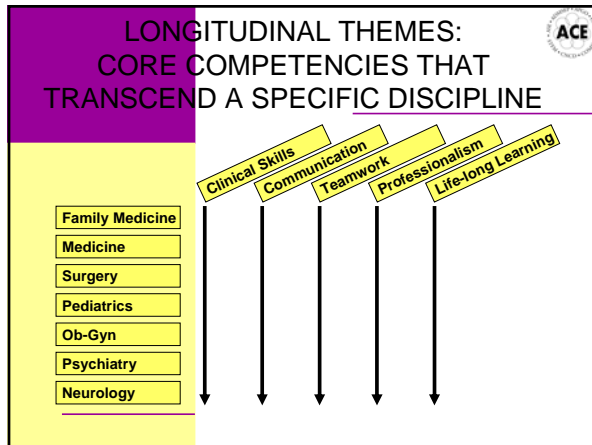
## IMPLEMENTING LONGITUDINAL THEMES IN CLINICAL EDUCATION - NEUROLOGY -

**David Lee Gordon, M.D.**  
 Chair, Consortium of Neurology Clerkship Directors, AAN  
 Director, Medical Student Education, Dept. of Neurology, UMMSM  
 Assistant Director, GCRME, UMMSM

Michael S. Gordon  
 Center for Research in Medical Education



**MILLER** SCHOOL OF MEDICINE  
 UNIVERSITY OF MIAMI



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## AAMC OBJECTIVES PROJECT & ACGME OUTCOMES PROJECT

<p><b>AAMC</b></p> <ul style="list-style-type: none"> <li>• Altruistic</li> <li>• Knowledgeable</li> <li>• Skillful</li> <li>• Dutiful</li> </ul>	<p><b>ACGME</b></p> <ul style="list-style-type: none"> <li>• Patient care</li> <li>• Medical knowledge</li> <li>• Practice-based learning &amp; improvement</li> <li>• Interpersonal &amp; communication skills</li> <li>• Professionalism</li> <li>• Systems-based practice</li> </ul>
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*Anderson et al., 1999* *ACGME Outcome Project, 1999*

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## 9 KEY ABILITIES IN BROWN'S COMPETENCY-BASED CURRICULUM

- Effective communication
- Basic clinical skills
- Using basic science in the practice of medicine
- Diagnosis, management, & prevention
- Lifelong learning
- Self-awareness, self-care, & personal growth
- Social & community contexts of health care
- Moral reasoning & clinical ethics
- Problem solving


*Smith et al., 2003*

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## AMERICAN ACADEMY OF NEUROLOGY & LONGITUDINAL THEMES

- PDFs available on web
  - Evidence-based medicine curriculum
  - Case-based ethics curriculum
  - Clerkship core curriculum
    - Objectives include examination and communication skills
- CNCD no formal recommendations regarding longitudinal themes

## MIAMI NEUROLOGY CLERKSHIP CLINICAL SKILLS



- Essential neurologic exam
  - Based on AAN guidelines & consensus of neuro educators from Miami, Wake Forest, Rush
  - Orientation-day training
  - Pocket card and website
  - Final-day neuro exam OSCE
- Neuro exam top-10 errors
- Essential neurologic findings
- Aphasia & coma SP sessions
- Longitudinal consistency
  - Same exam taught to M1s by M3-4s
  - End-of-M3 schoolwide OSCE



## CLINICAL SKILLS / COMMUNICATION / PROFESSIONALISM



### APHASIA & COMA SP SESSIONS

*Formative assessment, mandatory attendance.  
Aphasia exam 15 min; Coma exam 5 min, counseling 10 min*



Student examines SP



Facilitator and peers evaluate student performance on monitor



Self-evaluation and feedback from peers, SP(s), and facilitator

## MIAMI NEUROLOGY CLERKSHIP PROFESSIONALISM



1. Pre-session student preparation
  - Read ethics monographs
    - Written for laypersons
    - Brain death, end-of-life
  - Write professionalism critiques
    - Progress note
    - Photo of physician encounter
2. Scenarios
  - 2 volunteer students act as doctors
  - Other students critique, take notes
3. Discussion
  - Faculty-led
  - Tie together personal experiences, readings, and scenarios
  - Review and discuss critiques




End-of-life decisions



Ventilator withdrawal


## MIAMI NEUROLOGY CLERKSHIP TEAMWORK




- 2-h session w/ ID Jeopardy game followed by quiz
- Students prepare for game by reading ID-team-meeting narrative re: 4 pts (mock ID rounds)
  - Students encouraged to know pts “as if MD of record”
  - Students take notes on 3”x5” cards (1 per pt) for game
  - Game Qs re: ID Team, D/C-planning, medical issues
  - Students divide into 2 teams
- After game, 50-Q matching quiz re: ID team roles
 

*Neurotransmission Jeopardy:  
A Game of Interdisciplinary Communication*

## COMMUNICATION SKILLS / LIFE-LONG LEARNING



- Lecture & pocket card on orientation day
- Caregiver counseling (SP & ethics sessions)
- Case presentations
  - Regular ward presentations
  - Written & oral in WBT session
- Case summaries
  - Written (x 4) & oral (x 4)
  - Formative & summative assessments
  - Journal article each case



## Longitudinal Themes Across Clinical Medicine





Robin Deterding, MD  
President, COMSEP  
Assistant Dean for Clinical Curriculum  
University of Colorado

## Longitudinal Clinical Themes

ACE

- COMSEP: National Curriculum for pediatrics
  - Competencies –
    - Professionalism: Richard Sarkin & Steve Miller
    - Child Abuse
    - Child Advocacy
  - Task forces and sharing ideas
- Institutional: Local development & implementation
  - Structure - access
  - Human resources
  - Culture
- ACE: Common content across clerkships?
 

<http://www.comsep.org>

## A case study: University of Colorado School of Medicine

ACE

- Curriculum reform – all four years
- Central oversight but faculty owned
- Thread concept:
  - **Humanism, Ethics, Professionalism (HEP)**
    - + communication, law, spirituality, palliative care
  - **Medicine and Society**
    - Policy, economics, safety, systems, population health
- Human Resource Support: FTE for thread and block directors

University of Colorado  
SCHOOL OF MEDICINE  
Advancing Science  
Improving Care

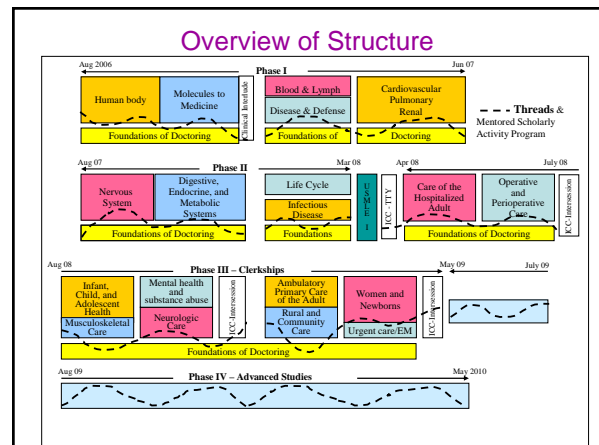
## University of Colorado School of Medicine

ACE

Structure for longitudinal Threads

- Access to curriculum - all 4 years
- Faculty Plan & Map: Course directors committees:
  - Essential Core – integrated with blocks and PBL cases
  - Clinical Core
    - Foundations of Doctoring
    - Intra-clinical clerkship block – required time to integrate with each block
    - Intersession – required time between clerkships and advanced studies electives
  - Other

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Improving Care



## University of Colorado School of Medicine

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HEP Thread:

- Examples of HEP:
  - **Essential core:** Ethics course, activities integrated with blocks and PBL cases (research ethics, vaccinations)
  - **Foundation of Doctoring:** Hidden curriculum and professionalism


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## University of Colorado School of Medicine

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- Examples of HEP:
  - **Clinical Core**
    - All blocks evaluate clinical professionalism
    - Operative and perioperative – consent
    - Infants, children and adolescent – Child Abuse
    - Ambulatory Adult- end of life/palliative care
    - Neurology – brain death
  - **Intersessions** – advanced group sessions on block patient experiences
  - **Other** - Professionalism committee, Honor Code, Gold Foundation

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**Medicine and Society Thread**


- Structure similar to HEP
- Medicine and Society examples
  - Uninsured patients – ED Block
    - Interview patient, follow up call, debrief
  - Economic M&M – Inpatient Adult
    - ID case, analyze cost of decisions, impact of clinical decisions, debrief
  - Child Advocacy / Child Abuse– Infant, children and adolescent
    - Child abuse didactics, PBL case and OSCE

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**Summary: Longitudinal Themes** 


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- Organizations can guide discipline specific content and provide idea sharing
- Institutions can provide
  - Structure and access to curriculum
  - Human resources
  - Local expectations and culture
- Could ACE help coordinate domains /threads content across specialties?
- Should this look different?



Association for Directors of Medical Student Education in Psychiatry


Martin Leamon, MD  
University of California, Davis



**Longitudinal Themes** 


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- ED-1-A: student progress
- ED-19: communication skills
- ED-20: common societal problems
- ED-21/22: culture and gender issues
- ED-23: medical ethics and human values

**ED-1-A: student progress** 

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- Within clerkship
  - logbooks, evaluation forms, inter-site meetings
- Between clerkships
  - Clerkship directors' meetings
  - historical concerns about “fairness” to student superseded by educational value of monitoring progress

**Longitudinal Themes** 

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- ED-1-A: student progress
- ED-19: communication skills
- ED-20: common societal problems
- ED-21/22: culture and gender issues
- ED-23: medical ethics and human values


## Older model



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- Pre-clinical
  - Human Behavior & Development and Psychopathology courses
    - interviewing skills; awareness of differences and of emotional suffering
- Clinical
  - Psychiatry Clerkship
    - Consult-Liaison, Inpatient, Outpatient
  - Outreach to other clerkships

## Newer model



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- Preclinical
  - “Doctoring,” “The Doctor and Patient,” etc.
    - multidisciplinary, integrated, small groups
- Clinical
  - Clerkships
    - regular Clerkship Directors’ meetings
  - Doctoring, continued
    - multidisciplinary, across all clerkships




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Tom Painter, M.D.  
University of Pittsburgh

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## Pittsburgh - Bridge Sessions Timing



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- Clinical Curriculum begins spring of year 2
- 25 months of required clerkship and electives
- 3 Bridge sessions
  - 3 days after month 6
  - 1 week after month 11
  - 3 days after month 23


## Pittsburgh - Bridge Sessions Content



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- Bioethics
- Communication skills
- Quality improvement
- Economics
- Student identified unmet needs
  - Radiology
  - ECGs
  - To be determined

## Pittsburgh - Bridge Course Questions



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- Timing
- Format
- Content
- Faculty Commitment

Longitudinal Themes 

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- Reservations

**Zero Sum Curriculum**


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Stolen from Faith Fitzgerald 

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- Evidence Based Medicine
- Bioethics
- Health Care Economics
- Quality Improvement
- Systems Based Practice
- Practice Management
- Prevention
- Clinical Epidemiology
- Women's Health
- Telephone Medicine
- Occupational Medicine
- Geriatrics
- Adolescent Medicine
- Reinforcing basic science principles

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Longitudinal Themes 

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- Reservations

- Zero Sum Curriculum
- Education doesn't end at graduation
- Hidden Curriculum Redux

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Thank you! 

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**TIME FOR DISCUSSION  
AND QUESTIONS**

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