As you come in....

PLEASE SIT AT A TABLE WITH A FACULTY MEMBER
Evidence-based Medicine Curriculum Development

Concurrent Session
Matthew Tuck, MD, MEd
Learning Objectives

• Describe the basic process of curriculum design
• Apply these principles to the design of your own learning session(s)
• Discuss curricular successes and challenges you are facing with mentors in a small group setting... speed dating!
Start at the End

• What do you want your learners to be able to do by the time they have completed the curriculum?
  – May require needs assessment
• Start with goals of the curriculum
  – Map to learning objectives for individual sessions
  – Develop educational sessions based on these objectives
• Assess learning
  – Should measure learning objectives
• Revise

Sample Curricular Goals and Objectives

<table>
<thead>
<tr>
<th>Course Length</th>
<th>Learner Level</th>
<th>Goals [This course will...]</th>
<th>Objectives [Learners will be able to...]</th>
</tr>
</thead>
</table>
| Short Course  | Novice (MS, PGY-1) | • Introduce the language of EBM  
• Illustrate question formation, study selection, and the hierarchy of evidence  
• Introduce core EBM definitions for different types of clinical questions  
• Highlight sources of bias in studies  
• Provide resources and references for critical appraisal and model several examples | • List the components of a well-structured question  
• Name the best study design for a clinical question  
• Identify sources of bias in studies on diagnostic testing and therapy  
• Calculate absolute risk reduction, relative risk reduction, number needed to treat  
• Interpret confidence intervals and describe their relationship to precision  
• List resources for evidence-based critical appraisal |

Bloom’s Taxonomy

Miller’s Pyramid - Assessment

**MILLER’S PRISM OF CLINICAL COMPETENCE** (aka Miller’s Pyramid)

It is only in the "does" triangle that the doctor truly performs

- **KNOWS**
  - Fact Gathering
    - eg traditional true/false MCQs
  - Interpretation/Application
    - eg through case presentations, essays, extended matching type MCQs

- **KNOWS HOW**
  - Demonstration of Learning
    - eg via simulations, OSCEs

- **DOES**
  - Performance Integrated Into Practice
    - eg through direct observation, workplace based assessment

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Based on work by Miller GE, The Assessment of Clinical Skills/Competence/Performance; Acad. Med. 1990; 65(9): 63-67
Adapted by Drs. R. Mehay & R. Burns, UK (Jan 2009)
Kolb: Learning Styles

Taken from Kolb Learning Style Inventory, p10
Teaching to Learning Styles

- Active learners learn by direct interaction with the material; prefer group communication
- Reflective learners like to think about the material; prefer individual or very small group communication.

- Sensing learners are detail-oriented and practical with a preference for concrete facts and real world applications
- Intuitive learners have a creative disposition and are drawn to the theoretical and abstract

- Visual learners are better able to remember images they have seen (charts, graphs, pictures)
- Verbal learners are better able to remember written or spoken words

- Sequential learners prefer learning linearly, with logical steps
- Global learners prefer a holistic approach and seem to learn almost randomly by fitting pieces together into a big picture

Taken from: Kolb Learning Style Inventory.
PLHET: A recipe for designing successful sessions

• Prep – What assignments or activities are expected of the learner prior to the session?
• Link – How does this relate to the learners’ prior knowledge?
• Hook – What’s motivating the learner?
• Engagement – What teaching method(s) and format(s) will you use to address different learning styles?
• Transfer – How are learners expected to use the information in the future?

Practice!
Duke Teaching and Leading EBM
A Workshop for Educators and Champions of Evidence-Based Medicine

Start here
- Teaching and Leading EBM
- Curriculum
- Schedule
- Participant Expectations
- Materials
- Hotel & Transportation
- Registration
- Workshop Directors

Materials

Web Resources
- Duke Medical Center Library Clinical Tools: PubMed, UpToDate, Cochrane Library, etc.
- JAMAEvidence: Rational Clinical Exam series, PPT, Users Guides, etc.
- EBM Guide: links to teaching EBM tips articles, CAT templates, tutorials, etc.

Logistics / Expectations
- Participant Planning Guide
- Examples of presentations for small groups
- Tips for Tutor Trainees
- 6 Ts for Teaching / Feedback

Large Group Presentation Slides (will be added during the Workshop!)

Workshop Manual (participants will receive this on a USB thumb drive as well as a print copy of the Users’ Guide to the Medical Literature, 3rd ed.)

- Duke Teaching and Leading EBM Manual

Supplementary Resources
Resources
Resources


• Tips for Teachers of Evidence-based Medicine

Common Challenges to Implementing an EBM Curriculum

- Balancing “required” (e.g. USMLE) with necessary (e.g. needed to practice) content
- Recruiting and retaining core faculty
- Buy-in of stakeholders
- Teaching in clinical environments
- Experiential learning
- Evaluating curricula and demonstrating benefit
- Sustainability
Speed Mentoring!