

Competency	Knowledge						
Sub Domain	Principles of Scientific Discovery						
Learning Objective	<p>1. Recognizes the central importance of discovery and understands how current medical knowledge is scientifically justified and evolves</p> <p>2. Critically appraises and incorporates new information in the practice of evidence-based medicine</p>						
Milestones							
Year I		Year II		Year III		Year IV	
Mid	End	Mid	End	Mid	End	Mid	End
<ul style="list-style-type: none"> • Describes scientific reasoning and its application to medicine and basic biological principles (1) • Describes hypothesis development (1) • Identifies examples of on or off campus expertise in leading edge research * (1,2) • Explains the value of scholarship as a critical professional responsibility (1) 	<ul style="list-style-type: none"> • Describes the basic components of medical manuscripts in a peer reviewed journal (1,2) • Identifies resources to find critically accepted medical information (2) • Explains how current medical knowledge is scientifically justified and how that knowledge evolves (1) 	<ul style="list-style-type: none"> • Compiles the appropriate primary literature to address a scientific question (1,2) • Describes hypothesis testing (1) 	<ul style="list-style-type: none"> • Describes skills required for communication in the fields of medicine and scientific inquiry ** (1,2) 	<ul style="list-style-type: none"> • Applies scientific reasoning skills and technology to promote evidence based medical practice (1,2) • Describes the ethical principles of clinical and translational research in patient care (2) 	<ul style="list-style-type: none"> • Discusses strategies and limitations of applying new scientific information into clinical practice (1,2) • Critically appraises a peer reviewed article and adequately presents it in a journal club setting (1,2) 	<ul style="list-style-type: none"> • Explains how to engage in medical research at this medical school and beyond (1) • Develops a testable hypothesis and/or clinical question for research (1,2) • Demonstrates skills required for communication in the fields of medicine and scientific inquiry ** (1,2) 	<ul style="list-style-type: none"> • Critically appraises and presents a peer reviewed article and applies findings to patient care in a journal club setting (1,2) • Writes and presents a scholarly (research or clinically based) abstract (1,2)

APPENDIX:

* Biomedical, educational, clinical, behavioral, implementation sciences

** ***Specific communication skills that should be mastered and applied to the fields of medicine and scientific inquiry*** (adapted from: [AAMC-HHMI Scientific Foundations for Future Physicians](#), 2009) ***include the ability to:***

- write logically and with clarity and style about important questions across disciplines;
- articulate persuasively, both orally and in writing, focused, sophisticated, and credible thesis arguments;
- be able to use the methodologies that particular disciplines apply for understanding and communicating results effectively;
- approach evidence with probity and intellectual independence; and
- use source material appropriately with scrupulous and rigorous attribution.