

Competency	Knowledge						
Sub Domain	Principles of Scientific Discovery						
Learning Objective	1. Recognizes the central importance of discovery and understands how current medical knowledge is scientifically justified and evolves 2. Critically appraises and incorporates new information in the practice of evidence-based medicine						
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.