Graduation Objectives for the Albany Medical College  
Basic Science - Doctor of Philosophy Degree  
Reviewed May 19, 2016

Students in the Basic Science Graduate Studies Program who achieve a Doctor of Philosophy degree are expected to demonstrate the knowledge and skills that are required for them to succeed as an independent scientist in academia or industry. Consistent with such expectations, students graduating with a Doctor of Philosophy are required to demonstrate the following abilities in order to be deemed competent to undertake further training or function as an independent scientist in either an academic or industrial setting.

Biomedical Knowledge

_Students must demonstrate a broad background knowledge in the biomedical sciences and a detailed knowledge on established and emerging concepts in their areas of expertise. Further, they must demonstrate that they can apply this knowledge to the formulation and investigation of research questions._

The student is therefore expected to exhibit the ability to:

1. Apply a comprehensive knowledge in biomedical science while developing expertise in a focused subject area.
2. Critically evaluate current scientific literature.
3. Integrate background information with emerging knowledge to devise hypotheses for advancing scientific knowledge.

Research Skills

_Students must demonstrate proficiency in conducting biomedical research using established and emerging experimental approaches/techniques to advance an understanding of human health and disease._

The student is therefore expected to exhibit the ability to:

1. _Design_ an experiment to test a specific question using the scientific method.
2. Identify and perform laboratory techniques necessary to test a specific research question.
3. Collect and analyze the data obtained while testing a hypothesis.
Communication Skills
Students must demonstrate the ability to effectively communicate both in written and oral formats the results, conclusions, and importance of their research.

The student is therefore expected to exhibit the ability to:

1. Present a research project (introduction, experimental design, results and conclusions from experiments) in both a written and oral format to the scientific community.
2. Write a manuscript that passes peer review.

Professionalism
Students must demonstrate a commitment to ethical principles and the highest standards of professional conduct in the planning, execution, documentation, interpretation, and communication of scientific research.

The student is therefore expected to exhibit the ability to:

1. Utilize ethical principles in the conduct, presentation and publication of their research.
2. Receive, interpret, and utilize constructive feedback as part of the peer-review and self-assessment processes.
3. Demonstrate personal integrity and ethical behavior.
4. Understand the regulations that govern animal care and use, laboratory safety, radiation safety, and the use of controlled or hazardous substances.
5. Exhibit compliance to all the rules and regulations that govern animal care and use, laboratory safety, radiation safety and the use of controlled or hazardous substances
6. Use appropriate coping mechanisms dealing with stress, intellectual uncertainty, and effectively reconciling conflicts.