



BE WiSE Biotech Bootcamp at Miramar College August 11 – 15, 2008

Life Sciences Summer Experience for BE WiSE Girls

This one week experience will expose the students to a working biology laboratory technology as it relates to the regions Life Science Industry. The laboratory addresses basic skills and techniques common to the industry such as growth and manipulation of bacteria, genetic engineering, polymerase chain reaction and antibody methods. In addition to hands on skills, the course will provide context for how and why these techniques are used in the industry. The AMGEN-Bruce Wallace Laboratory curriculum is the foundation of this experience which will expose the participants to three Nobel Prize techniques and are built around four central paradigms: 1) recombinant DNA technology, 2) gene expression, 3) protein purification, and 4) the polymerase chain reaction (PCR).

EXPECTED STUDENT LEARNING OUTCOMES:

1. Describe the Biotechnology Industry
2. Understand the importance of laboratory safety in the Biotechnology industry
3. Measure volumes accurately using appropriate instruments and the metric system
4. Describe in written and oral format experimental outcomes using graphs
5. List the basic steps of the ELISA protocol and describe its use in medical diagnosis disease (e.g., AIDS and pregnancy)
6. Analyze DNA with electrophoresis and Polymerase Chain Reaction (PCR)
7. Describe the use of protein isolation, DNA technology and antibodies in the Biotechnology Industry
8. Explain the role of Genetic Engineering in Biotechnology