Format of the ASBMB Certification Exam

- Primarily free response format (little or no multiple choice), 60 minutes long.

- Emphases overarching concepts, critical thinking skills, and the ability to synthesize responses rather than retrieve facts.

- Contains twelve to fourteen questions covering four core content areas:
    1. Energy is Required by and Transformed in Biological Systems.
    2. Macromolecular Structure Determines Function and Regulation.
    3. Information Storage and Flow Are Dynamic and Interactive.
    4. Discovery Requires Objective Measurement, Quantitative Analysis, & Clear Communication.

- Exam questions will focus upon the evaluation of concepts and competencies outlined in the ASBMB learning goals and objectives: www.asbmb.org/accreditation/curriculum/

The ASBMB recommends that students taking the exam be able to:

- Use Gibbs law to describe or predict how enthalpy and entropy contribute to ΔG.

- Construct and make predictions using the equation that relates the equilibrium constant (Keq) for a given reaction to the concentrations of the participating reactants.

- Describe the quantitative relationship between ΔG and Keq for a chemical reaction.

- Calculate the pH of a buffered solution given the pKa and concentration of the protonated and deprotonated forms of a simple buffer, or vice-versa.

- Use the Michaelis-Menten equation to describe the dependence of reaction velocity on substrate concentration for a monomeric enzyme.