Microorganisms have been viewed as the disease-causing scourge of humankind since the time of Louis Pasteur and Joseph Lister. Today’s students have been fed a steady diet of anti-microbial advertising that expounds the need for germ-killing soaps, cleansers, toiletries, and even bed coverings. However, recent advances in biotechnology have shown that the positive attributes of microbes greatly outnumber those that may be detrimental. Microorganisms are used to make or alter the taste of much of the food that we eat. They produce many of the antibiotics that we rely on for controlling infections. The process of bioremediation uses microbes to clean up toxic wastes, as in the case of the Exxon Valdez oil spill in Alaska. Microbes may even be used to generate electricity in biological fuel cells. The Earth has a limited supply of fuel hydrocarbons, and societal demand for energy is increasing at an exponential rate (Bennetto, 1984). Biological fuel cells, which tap the enormous potential for making electricity through microbial metabolism (Bennetto, 1984), may one day be used to fuel our cars, power our lights, and run our computers.

Metabolism, the sum of all chemical reactions within a living organism, is one of the most fundamental concepts presented in introductory microbiology courses. However, it is often difficult for instructors to effectively translate perfunctory diagrams of glycolysis, the Krebs cycle, and the electron transport chain in a way that is meaningful to students. Instructors have been faced with the glazed eyes of stupefied students after a description of even the most simplified metabolic pathway. An understanding of metabolism is integral to the appreciation of microbial life, and it behooves microbiology instructors to place the study of metabolism in a context that facilitates this appreciation. The electrochemical nature of many biological processes may provide an avenue for such an

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