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Jeff R Knisley* (knisleyj@etsu.edu), Box 70663, Dept. of Mathematics, East Tennessee State University, Johnson City, TN 37614-0663, and **Istvan Karsai** (karsai@etsu.edu), Box 70703, Dept. of Biological Sciences, East Tennessee State University, Johnson City, TN 37614-0703.
Symbiosis: Integrating Mathematics and Statistics with an Introductory Biology Sequence.

The Institute for Quantitative Biology (IQB) at East Tennessee State University is in the process of a bold transformation of its introductory biology sequence, one that will address many of the BIO2010 report recommendations by seamlessly combining mathematics and statistics with introductory general biology. This new curriculum is a symbiosis of mathematics and biology that will be realized both in the lectures and in the labs. The key to this new curriculum is in using biology to create both the need and the context for mathematical development, thus allowing mathematics to be a unifying theme within the diversity of biological systems. We will describe several successful projects that motivated the Symbiosis project, how it is being supported by a 1.7M Howard Hughes Medical Institute grant, and how this new curriculum and seamless integration is being developed, disseminated, and deployed. (Received September 26, 2006)