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More About Less: Defining the Essential Core

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Given the rapid expansion of knowledge, teachers of biochemistry and molecular biology, in common with many other fields, need to focus carefully on the scope of what they attempt to cover. This is particularly important in the context of biological sciences curricula where biochemistry and molecular biology are core, but not extensive components.

This applies equally to theoretical and practical programs. One needs to consider what essential concepts and skills must be imparted, and how independent and lifelong learning may be fostered. Course content may also be constrained by the need to address multiple graduate attributes that relate to processes in addition to the acquisition of knowledge, for example facilitating teamwork, problem solving and other higher cognitive activities.

In this presentation I will discuss the approaches we have taken to provide core instruction in biochemistry and molecular biology, sensitive to the needs of curricula focusing on biotechnology, bioinformatics, biomedical science, plant science and ecology, in addition to chemistry. Our focus is on providing the essential concepts of biological structures, classes of compounds and metabolism. We are then able to refer students to sources of information that build upon these concepts. In terms of our practical curricula, we strive for an appropriate balance between wet laboratory work and alternative meaningful activities.