

## Introductory Molecular And Cell Biology Courses Open General Discussion

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One evening a group of about 30 ABLÉ participants met to discuss introductory level molecular and/or cell biology courses. After comparing information about the general course structure of our various courses, we focused discussion on the laboratory component. The purpose of the interaction was partly to determine the degree of similarity in our respective offerings and partly to discuss our laboratories in context. That is, our laboratories are intentionally grouped together and build on previous techniques and concepts; the labs are not isolated activities. Also, laboratories plus lectures (and sometimes tutorials) make up the whole course.

The ideal outcome of our session would have been a summary statement about a generic introductory molecular and cellular biology course. I also hoped to formulate a wish list of laboratory exercises for future ABLÉ Conferences. Early in the discussion it became obvious that there is no such thing as a common approach to introductory cell and molecular biology! Several main topics were generally covered such as cell form and function; DNA replication, transcription and translation; and enzyme kinetics. However, the breadth and depth of the coverage varied considerably. Correspondingly, the complementary laboratories varied also; consequently, we could not compile a group wish list of labs for future ABLÉ conferences. At least the participants had the opportunity to share ideas and concerns.

The following summary of differences in general course structure and laboratories is based on the small sample of 30 ABLÉ participants and 15 written submissions sent to me before the conference. The first important variable is when the course is offered: many schools' first year course in cell and molecular biology with or sometimes without any chemistry pre/co-requisite. A few schools waited until third year and usually required organic as well as first year chemistry. The other large group of schools introduce molecular/cellular biology in second year with at least first year chemistry and/or biology as prerequisites. At least two schools had no undergraduate course in molecular biology.

The school term and number of lectures and laboratories were two other variables. Most schools have semesters, some have quarters, while full year courses are least common. Most schools have three lectures per week, a small number have two. Biweekly laboratories were more common than weekly.

Some general comments were voiced about laboratories. With greater emphasis on the new molecular techniques, there is less time (no time) to teach basic fundamental techniques, for example, pipetting, making solutions, basic microscopy, sterile technique; using equipment such as spectrophotometers, centrifuges, analytical balances, pH meters; and tissue culturing.

Although the specific lab exercises varied considerably, there were a few types of labs commonly found: labs on enzyme kinetics, organelle isolation, nucleic acid (DNA or RNA) separation, protein separation and analysis, mitosis/meiosis. Far less common were labs dealing with karyology or employing tissue culture.

In conclusion, the discussion group found the forum useful although we discovered more differences than similarities in how and what we teach. The trend for schools to put their course lab outlines “online” will be useful so the material is accessible for specific information.