



## **Integrating the Basic Science Curriculum at Pacific Phase I: Anatomy, Biochemistry and Physiology**

At Pacific, the basic sciences such as anatomy, physiology and biochemistry are considered “foundational”. Given in the first year, they are arranged as a sequential, partially overlapping series of courses that are largely independent of one another. Viewed through the lens of National Boards Part I scores and pass rates this traditional approach to basic science teaching has been successful at Pacific. However, when taught separately, students can’t clearly see the interrelationships that exist between basic sciences, let alone between basic and clinical sciences.

The first steps toward integration of basic science teaching were taken by the Department of Anatomical Sciences. The gross and microscopic anatomy courses were combined, and as a result, general histology and gross anatomy are now given together in the same course. Similarly, oral histology and head and neck anatomy are amalgamated into a second course. This change has been well-received by the students. Nevertheless, because of a lack of coordination with biochemistry and physiology, it remains difficult for students to appreciate the value and importance of integrating anatomical, biochemical and physiological knowledge. Further, significant redundancies continue to exist that result in unnecessary repetition.

Therefore, we have begun to explore ways of providing a more integrated presentation of topics in anatomy, physiology and biochemistry. Our guiding assumptions have been that greater integration will 1) help our students develop a more robust working knowledge of the human body (structure, function and metabolism) and 2) reduce unnecessary repetition and allow greater use of innovative, case-based and other teaching modalities than we do currently. One approach, which has been adopted by several medical, dental and nursing schools, is to create large interdisciplinary “systems courses”. An alternative is to move to a problem-based basic science curriculum. However, the first approach may be problematic given the small size of our basic science core faculty, and the very time- and faculty-intensive nature of the second would be very difficult to accommodate within Pacific’s three year curriculum

We believe that integration can be achieved, however, by carefully aligning topics within separate anatomy, physiology and biochemistry courses, and by developing a series of case-based, interdisciplinary seminars. Anatomy, biochemistry and physiology would be given over three quarters (1<sup>st</sup> quarter, cell and tissue structure and function, basic biochemistry; 2<sup>nd</sup> quarter, systems anatomy and physiology, correlative biochemistry; 3<sup>rd</sup> quarter, head and neck anatomy, oral histology, CNS physiology and topics in oral biology). The sequence and timing of lectures, labs and seminars within each quarter have yet to be determined, but the alignment of topics will take precedence over rigid course scheduling (e.g. physiology every Tuesday and Thursday from 12:00 noon to 1 p.m.).