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**Teaching Bio-inspired design using heart and circulatory system as a model**

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Cardiovascular system is an open book of design for an engineer searching for innovation in the particular area of efficient fluid transport. But the routes of technology transfer from nature's technology to engineering science are not always so obvious. The main challenge is how to train our future students to find these hidden innovations and apply them based on sound engineering and scientific principles. As part of a 3 quarter course at Caltech that is called "Physiology for Bioengineers," we try to discuss examples of such cases by introducing students to the critical thinking that is required for model development. In this talk, I will give two examples from the third quarter of this course where students are asked to develop a physics-based model to describe the efficient pumping of blood in embryonic and adult hearts.