Mechanical Circulatory Support for the Failing Heart

My talk will begin by discussing the basic physiology of the native heart and the implications of this information as relates to the design of replacements for the failing heart.

I will introduce the engineering design of mechanical circulatory support devices, from the first implantable total artificial heart in 1982, to current designs for infants/neonates which are the size of an AA-cell battery. The strengths and weaknesses of the various blood pump technologies will be described with a focus on how to improve the current technology.

A major focus of my presentation will be on the patients who receive mechanical circulatory support devices either as a bridge-to-cardiac transplantation or as destination therapy.

I hope that my presentation will spark an interest among you to join the battle against the number one killer of Americans … cardiac disease!