

Qs

- What is "the reductionist movement"?
- What is implied by "quantitative, computer-driven approaches"?
- What precisely defines "multiscale modeling"?
- Key theme of paper: "Coupling between"
- Note: "converts contractile forces into ventricular pumping"  
→ forces + oscillations = reliable pump!
- (some) Key facets: □ regular (not arrhythmic), □ electrical ("excitation"), □ proper/optimized  
□ geometry □ coupling
- Key physics concept @ core of Fig. 1: Electrodiffusion → will motivate towards end of fall term!
- Importance of "calcium" movement...
- How does the role of "energy" start to emerge?
- 1924 Nobel Prize to W. Einthoven re EKG
- Key concept: "wave of electrical excitation" → what is a "wave"?  
Note: key role of  $\text{Na}^+$  and  $\text{K}^+$  ions, as well as "specialized ion channels"