Seminar title:

"Multiscale approach to illuminating the mechanisms of, and guiding therapy for, atrial fibrillation”

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Abstract:

Atrial fibrillation (AF) is very difficult to study comprehensively in large-animal models, in part because it has several variants, is multi-factorial, and evolves over time and also because of the inherent technical difficulties of maging whole-atria electrophysiology in vivo. Predictive multiscale computational modeling can help to overcome such hurdles and help to evaluate potential pharmacological and device-based AF therapies. Because a multiscale atrial model is only as strong as its underlying cellular model, we are working to improve atrial cell model fidelity. To do so, we are applying dynamically rich electrophysiology protocols to human atrial cells and then using automated parameter tuning methods to formulate models based on that data. The improved cellular equations are then incorporated into 3D models, which are informed by human atrial CT scans and electrophysiological data, to illuminate mechanisms of human atrial fibrillation and ablation efficacy.

Research Interests: http://www.christinilab.org