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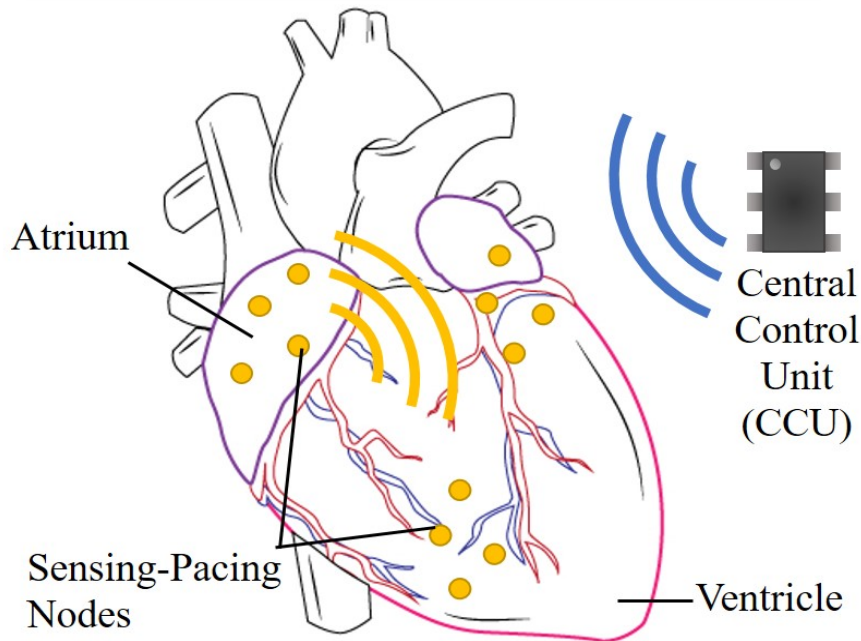
# Episode- and Patient-Specific Wireless Multisite Pacing of Diseased Human Hearts

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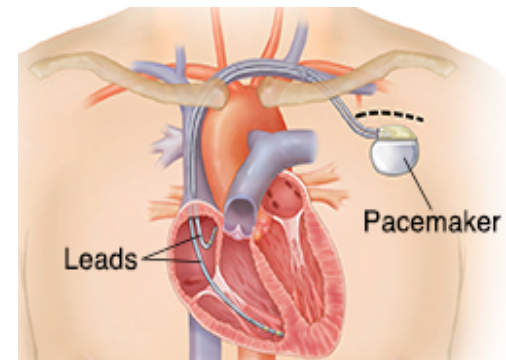
# Purpose

Develop algorithms and build hardware to control the function of diseased hearts

## Wireless Multisite System

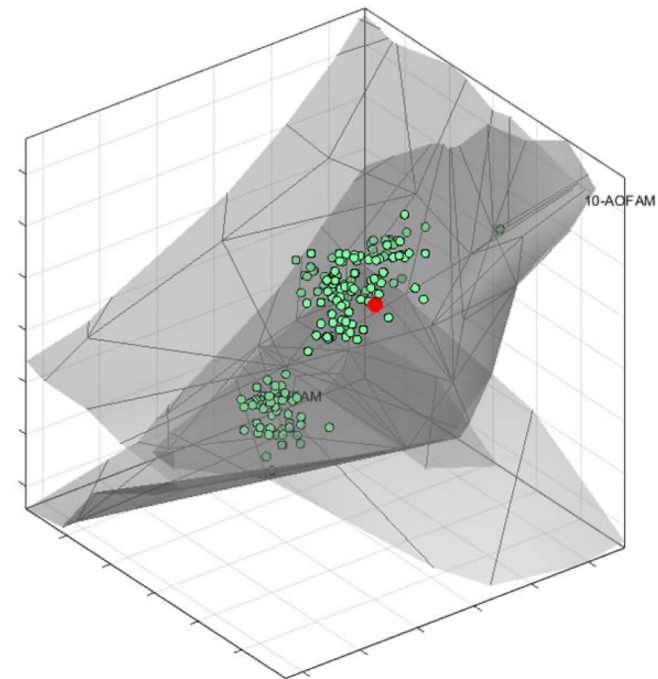
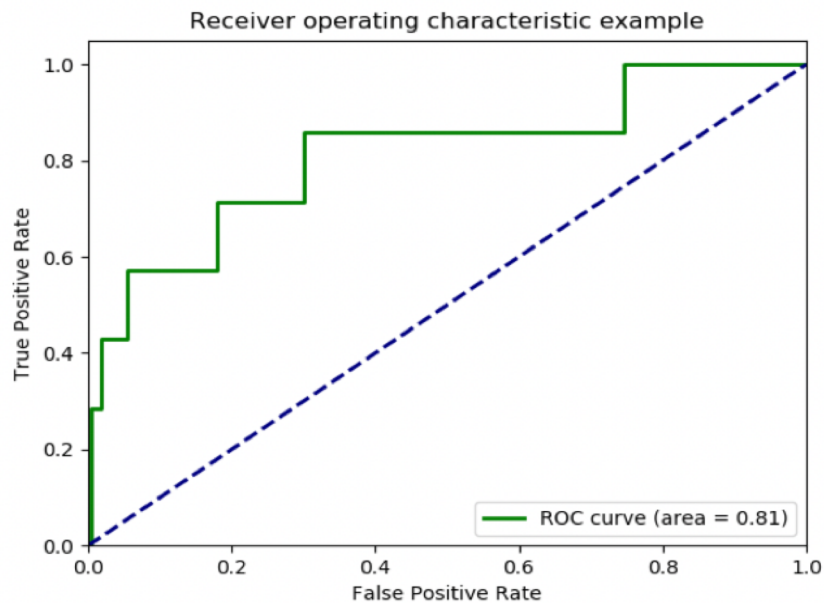


## Current Pacemaker



# Findings

- Identify the ideal ablation point with great success
  - ablation points in mitigating premature ventricular contractions (PVC)
  - Pre-processing: deep scattering network
  - Machine learning: supervised Random Forest classifier.



# Pernicious Problems

- SmartExchange algorithm-hardware co-design
  - **Ultra energy efficient**
    - Reduced recharging frequency
    - **15 years** with more nodes
  - **Ultra miniature**
    - Implanted in a pouch under the skin of the chest