

**Mathematical Physiology**  
**Possible Special Topic choices**

- Models of calcium-induced calcium release/muscle action
- Models of action potentials in the heart
- Oscillations and/or chaos in delay differential equations
- Respiratory arrhythmias
- Cardiac arrhythmias
- Blood cell diseases
- Chemical/biological waves in two or three dimensions
- Regulation of acid-base balance
- Neurotransmitters and brain function
- How poisons work
- Neural networks
- Mathematics of the digestive system  
(<https://aip.scitation.org/doi/full/10.1063/5.0096877>)