

#### MIT2000-10: ORNET, A Network for the Operating Room of the Future

John Guttag and Hari Balakrishnan





- Research areas
  - Communications architectures
  - Networks of devices
  - Remote monitoring
  - Medical signal processing
- Specific goals
  - Construct a multi-tiered medical sensor net
  - Demonstrate useful applications of sensor fusion
  - Assure properties related to safety criticality



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# **Progress Through December 2001**

- Built prototype device manager
- Built remote monitoring software
  - Wireless on handhelds
- Attached two physical devices to net
  - Electronic stethoscope, infusion pump
- Built proxies for synthetic devices
  - Robust heart rate, cardiac annunciator



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## **Research Plan for the Next Six Months**

- Solidify infrastructure software
- Work with clinicians to gather data
  - EEG, acoustic
- Build novel proxies
  - Seizure detection, mitral valve prolapse detection
- Port remote monitoring capability
  - To 3G phones