

# Wireless Media Access Control

# Basic MAC Goals

- Arbitrate control of the channel so that:
  - ▶ One node should be able to use 100%
  - ▶ Multiple nodes should receive a fair share
  - ▶ High utilization under contention

# Ethernet CSMA/CD

- On transmission:
  - ▶ Set  $n=0$
  - ▶ If channel is idle, transmit
  - ▶ If channel is busy, wait until channel is idle for 96 bit times, transmit
- During transmission:
  - ▶ If no collision detected, wait 96 bit times, accept next frame for transmission
  - ▶ If collision detected
    - Send a jam signal
    - Choose a time  $t = (0, 2^n) * 512$  bit times
    - Increment  $n$
    - Check channel again at time  $t$

# Problem with CSMA/CD in Wireless

- On transmission:
  - ▶ Set  $n=0$
  - ▶ If channel is idle, transmit
  - ▶ If channel is busy, wait until channel is idle for 96 bit times, transmit
- During transmission:
  - ▶ If no collision detected, wait 96 bit times, accept next frame for transmission
  - ▶ If collision detected |
    - Send a jam signal
    - Choose a time  $t = (0, 2^n) * 512$  bit times
    - Increment  $n$
    - Check channel again at time  $t$

# Not a Shared Medium

