

# Backup Recovery

INFM 718X / LBSC 708X

Session 9

# Backup Goals

- Undoing a user error
  - `cd ../backup` on `terpconnect`
- Recovery from storage failure
  - RAID, periodic backups
- Business continuity
  - Offsite storage, remote data centers
- Offline storage
  - Files that may be needed in the future
- Replication for long-term preservation
  - IA, LOCSS, SRB

# Typical Assumptions

- MTBF is large
  - Particularly with RAID arrays
- Moderate MTTR is therefore acceptable
- Simple goals
  - Restore an operational system to a prior state
  - Single-file or full-system

# Backup Levels

- Level 0 (Full)
  - All data
- Level 1 (Incremental)
  - All data since the most recent Level 0
- Level 2 (Overnight)
  - All data since the most recent level 1

# Backup Media

- Magnetic tape
  - Media reuse policy
- Magnetic disk
  - Mirroring for large collections
- Optical disk (e.g., DVD)
  - Mostly for personal use

# Examples at Maryland

- Standard backup services
  - OIT, UMIACS, ...
- Database backups (grades, financial, ...)
  - Often including transaction logs
- Email servers
- Personal
  - e.g., on DVD's