History of Security

- First computer security concerns
  - ’50s—confidentiality of classified info [RG91]
    - Against espionage or invasion of privacy (military)
  - ’60s—Shared computer/network resource [GS96]
    - Protect information integrity

- Computer vs information security
  - Computer security seen as a means toward the goal of information security [CB94]

- A more recent notion: Trust
  - Of system to preserve and protect your data [GS96]
Where SE Security Stands (Afterthought)

- Principal results
  - Concepts of security model and policy ('75)
    - Mandatory access control/Matrix model [HRU75]
    - Bell & LaPadula’s multilevel security model [BL75]
  - Proof-carrying code for SW comp verification [Ne97]
- Big open problem:
  - Lack of unification between
    - Requirement/design modeling and
    - Security policy design

History of Software Economics

- Economics
  - Information economics ('60s)
    - Software economics (late-'60s)
- Some first’s
  - Major study of software costs [Ne66]
    - Linear regression model for estimating SW costs
  - Comprehensive application of info econ to computers [Sh69]
- '70-80s—toward Development & Extension?
  - Software cost models, incl. COCOMO [Bo81]
  - Various info econ techniques for decisions, management, etc.
Status of SW Economics Research

- Principal results
  - Basic software cost models
  - Spiral [Bo88], iterative, & evolutionary development models incorporating risk management
- Big open problem
  - Lack framework connecting technical properties/decisions with value creation