Outline for January 22, 2008

1. Schematic Protection Model
   a. Model components
   b. Link function
   c. Filter function
   d. Example: Take-Grant as an instance of SPM
   e. Create operations and attenuation
   f. Flow functions, maximal state
   g. Safety analysis

2. Expressive power
   a. HRU vs. SPM
   b. Multiparent joint creates in HRU
   c. Adding multiparent joint creates to SPM (giving ESPM)
   d. Simulation of multiparent joint creates by 2-parent joint creates
   e. Monotonic ESPM, monotonic HRU equivalent
   f. Safety question in ESPM decidable if acyclic attenuating scheme

3. Comparing Expressive Power of Models
   a. Graph representation
   b. Simulate 3-parent joint create using 2-parent joint create
   c. Correspondence between two schemes in terms of graph representation
   d. Formal definition of scheme A simulating scheme B
   e. Model expressive power
   f. Result: monotonic 1-parent models less expressive than monotonic multiparent models (so ESPM more expressive than SPM)

4. Typed Access Matrix Model
   a. Add notion of type for entities — set of types T, set of subject types TS ⊆ T
   b. New create rules: specify subject/object type
   c. Safety decidable for systems with acyclic MTAM schemes