Notes on modeling, IST 402
Frank Ritter

Why do this?
- The reasons
- Examples applications, example models, example success stories

How to model
- Levels of models, knowledge, PSCM, symbol level
- Cognitive architecture, answer to UTC, what does it mean, breadth of the vision
- Cognitive architecture, what are at least one?
- Soar, what's the high-level structure, diagram, "how the gears clank and how the pistons go…."
- Mapping from soar architecture to data about humans, RTs, errors, strategies, VPA
- Bonus points: why it might not be (fully possible)
- Soar, low level details, why and how they bite, how to bite back, how simple models work
- The role of simulations, something for models to do, and how they model vision and motor
- The role and use of High-Level Behavior Representation Languages (HLBRL)
- What's wrong with current architectures?
- Bonus: how to fix them!

How to build models
- From anecdotes, raw insights, quirks, and simple prejudice
- Ritter and Larkin paper
- The role for task analysis,
- How to build models from scratch
- Model libraries, and building from them

How to test/prove models
- Overview of providing evidence for models
- Grant's paper, not to prove, but provide support for, the role of paying heed to previous models, previous ways of providing support, graphing, writing.
- Something is better than nothing
- Theories of science, theories of data and data/theory comparison
- The role of insight and insights

Insights
- Learning is ubiquitous
- Learning has many parts
- Interaction counts
- Usability counts in calculus, why not modeling?
- Verbal protocols lag about 1 second from motor outputs and cognition

How to read papers/find out more
- What's a paper, conference, journal, workshop, tech report
- Read for content in the end anyhow

Further comments
- Train you to be comfortable doing uncomfortable tasks. And it's worth it.
- Successful people are willing to do things that unsuccessful people are not willing to do