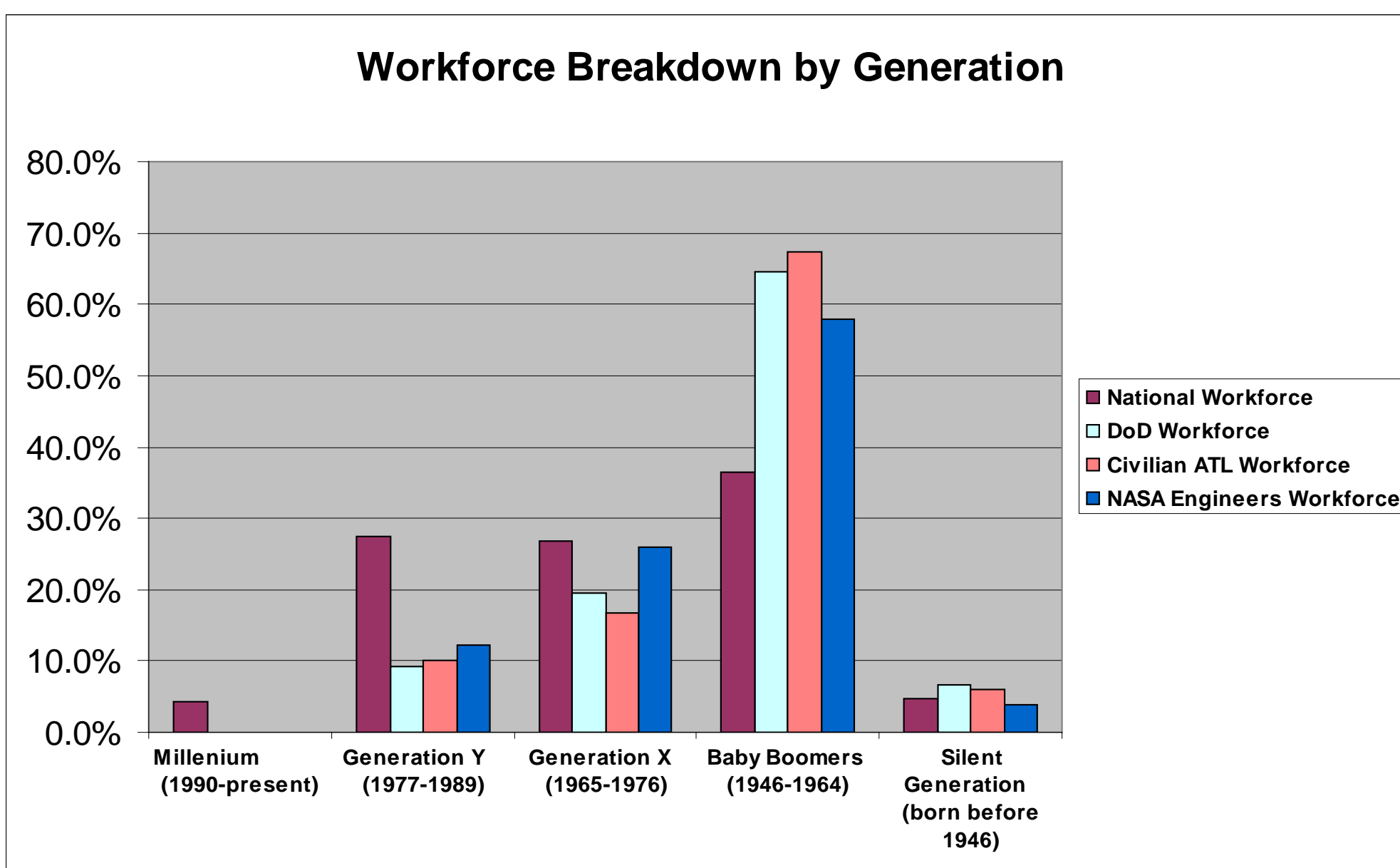


## RT16

### Workforce Demographics



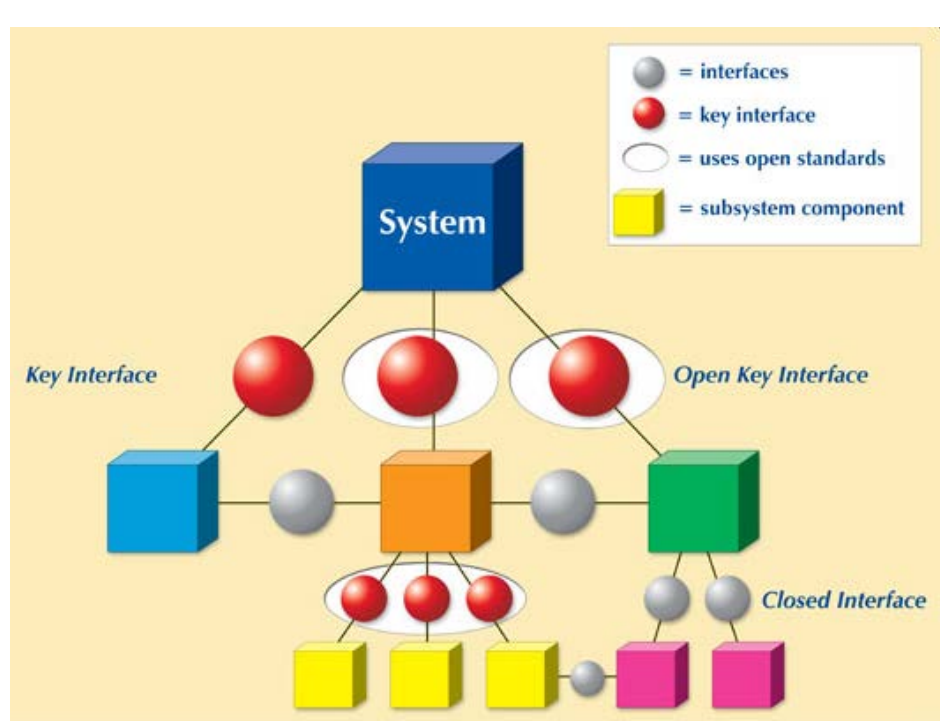
### Experience Accelerator Goals

- To build insights and "wisdom" and hone decision making skills by:
- Creating a "safe", but realistic environment for decision making
  - Exposing the participants to the "right" scenarios and problems
  - Providing rapid feedback by accelerating time and experiencing the downstream consequences of the decisions made

### Transforming SE Development

- We postulate that the new paradigm must be:
- Integrated:** Provides an integration point of multi-disciplinary skills and a wide range of Systems Engineering knowledge in a setting that recreates the essential characteristics of the practicing environment.
  - Experience Based:** Providing accelerated learning opportunities through experience-based interactive sessions.
  - Agile:** Allowing for quality, timely development of course material that is most appropriate for the target students.
  - Time/Cost Efficient:** Compressing multi-year lifecycle experiences into a much shorter period of time.

### Emphasis on Open System Architecture

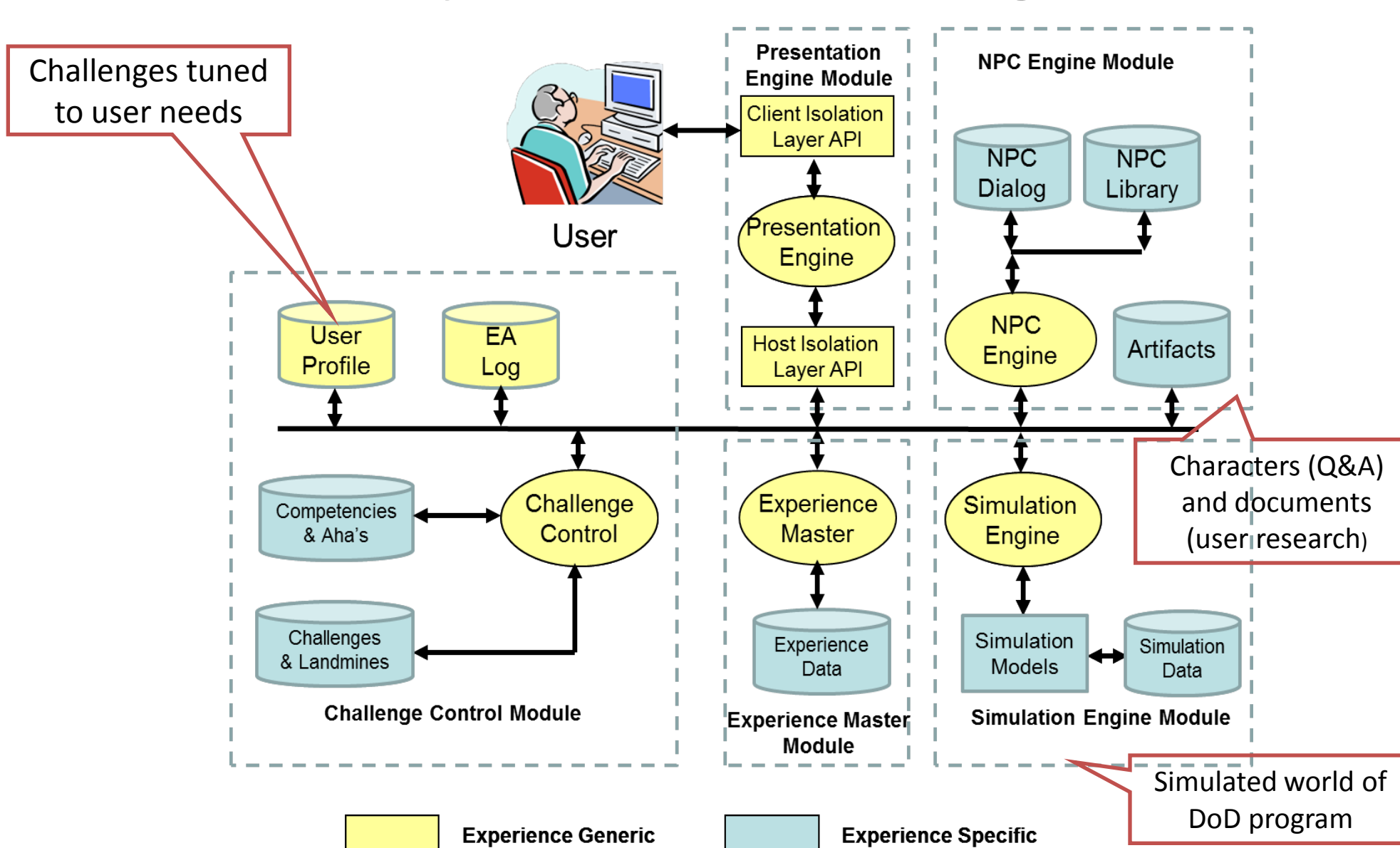


- Principles:**
- Establish an Enabling Environment
  - Employ Modular Design Principles
  - Designate Key interfaces
  - Use Open Standards
- Benefits:**
- Reduced development time and overall life-cycle cost
  - Ability to technology as it evolves
  - Commonality and reuse of components
  - Increased ability to leverage commercial investment

The Experience Accelerator's emphasis on Open System Architecture is coupled with strong preference for use Open Source Software products for implementation wherever appropriate

### EA Architecture

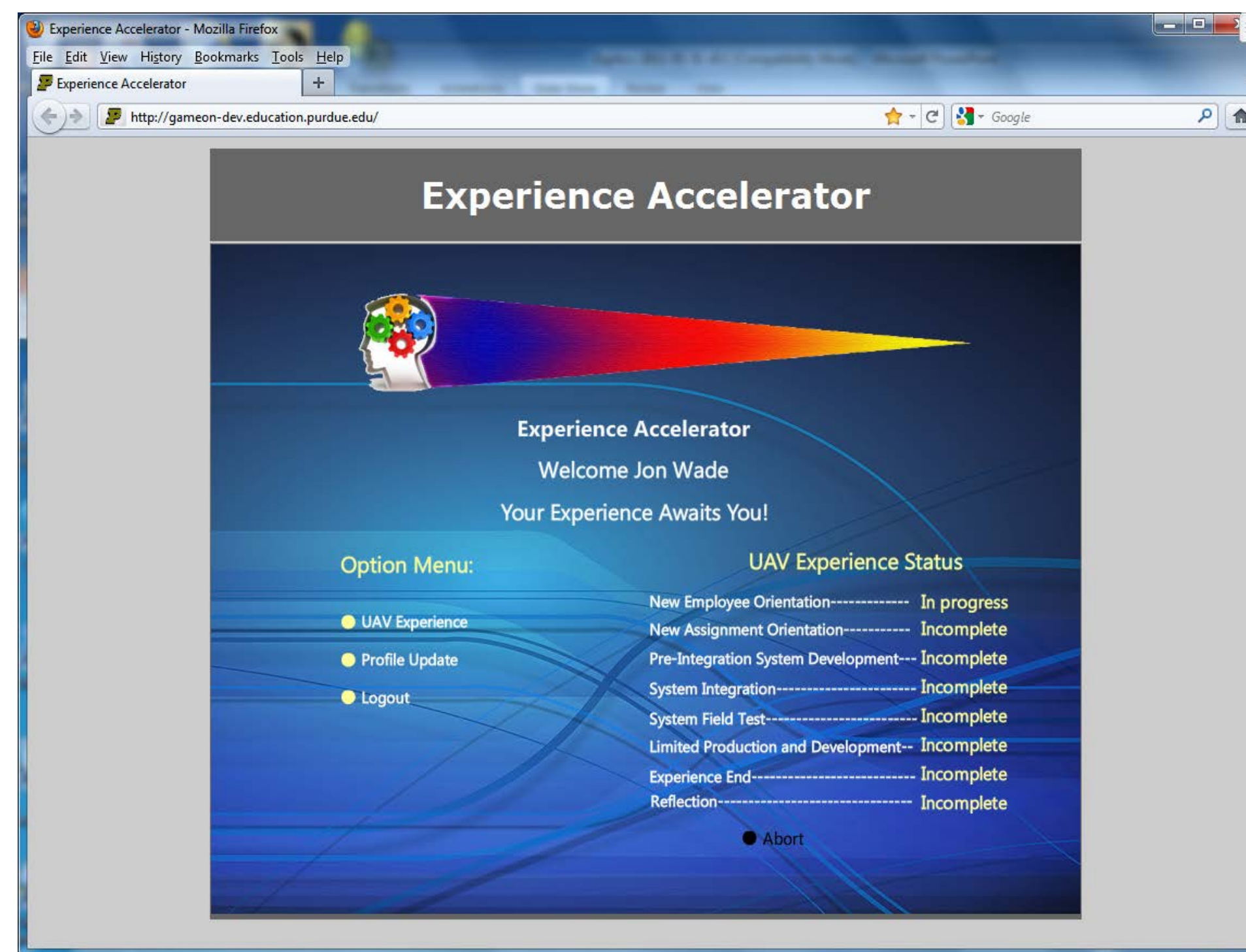
Experience Accelerator Block Diagram



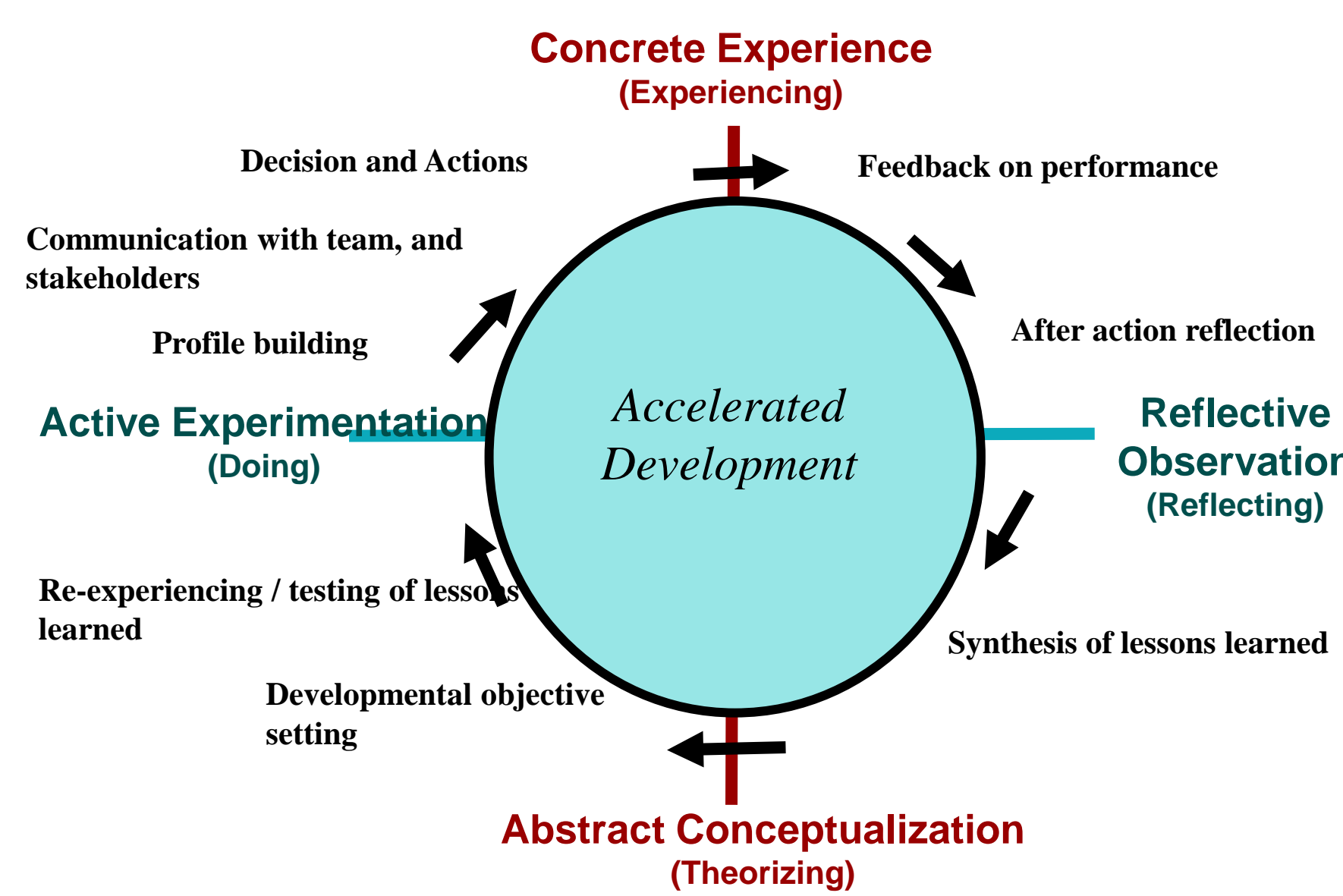
Contact for more information:

- Jon Wade, [jon.wade@stevens.edu](mailto:jon.wade@stevens.edu)  
 Bill Watson, [brwatson@purdue.edu](mailto:brwatson@purdue.edu)  
 Doug Bodner, [doug.bodner@gatech.edu](mailto:doug.bodner@gatech.edu)

**Hypothesis:** By using technology we can create a simulation that will put the learner in an experiential, emotional state and effectively compress time and greatly accelerate the learning of a systems engineer faster than would occur naturally on the job.

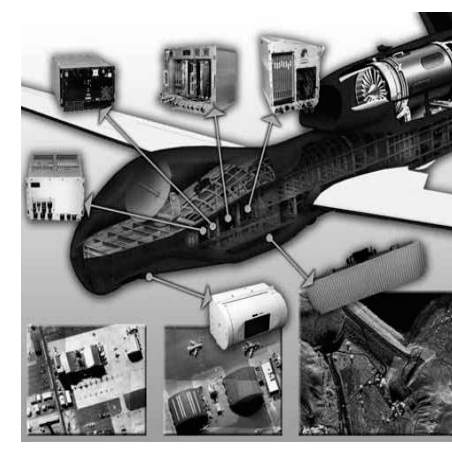


### Learning Process



### The Experience: A Day in the Life of a PSE

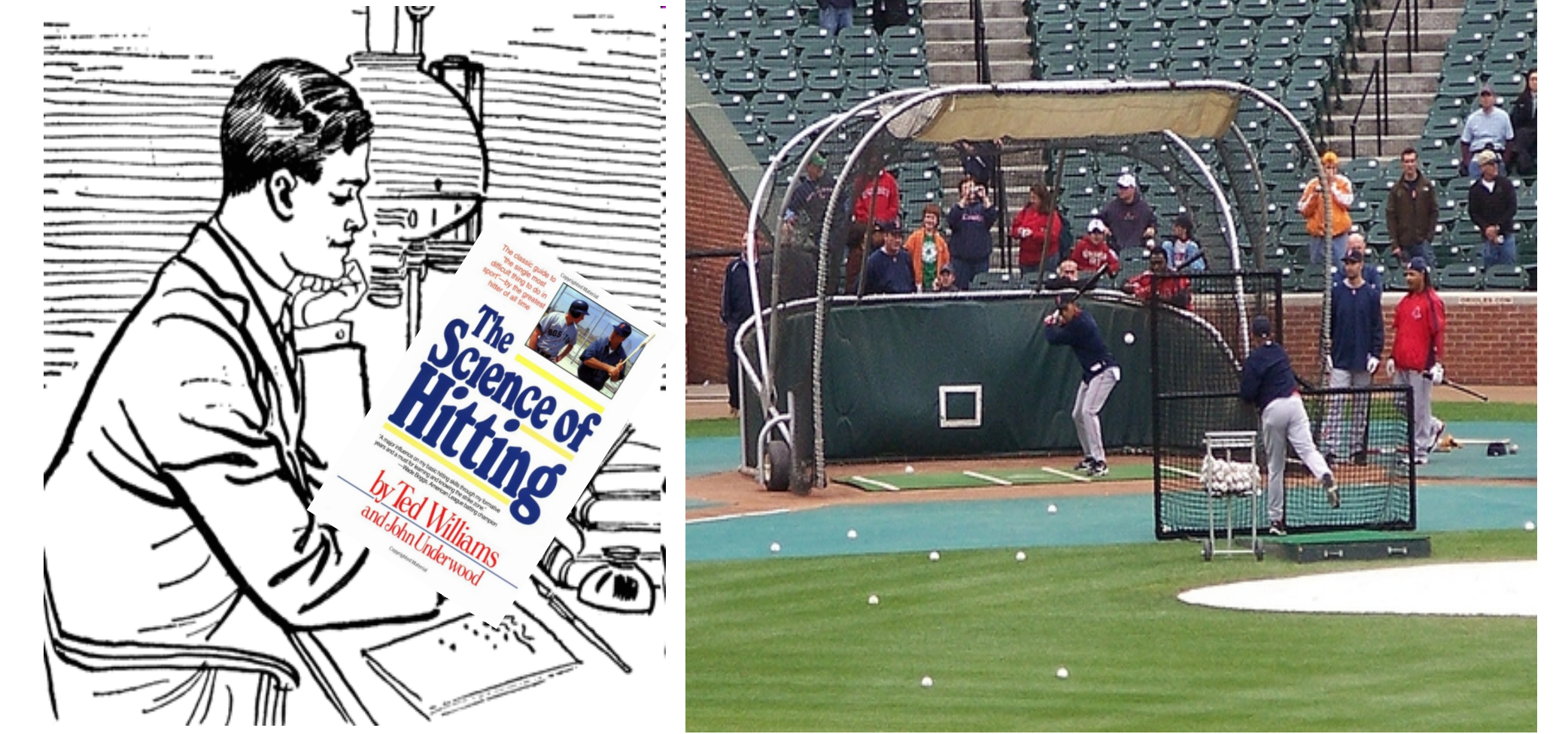
- UAV System:**
- Airframe and Propulsion
  - Command and Control
  - Ground Support



- UAV KPMs:**
- Schedule
  - Quality
  - Range
  - Cost

- Phases:**
- EA Introduction
    - Phase 0: New Employee Orientation
  - Experience Introduction
    - Phase 1: New Assignment Orientation
  - Experience Body
    - Phase 2: Pre-integration system development -> CDR
    - Phase 3: Integration -> FRR
    - Phase 4: System Field Test -> PRR
    - Phase 5: Limited Production and Deployment -> ISR
    - Phase 6: Experience End
  - Experience Conclusion
    - Phase 6: Reflection
  - Each session = 1 day

### What's More Effective?



### Experience Accelerator Team

#### Experience Design:

- Jon Wade, PI – Stevens
- Alice Squires\* - Stevens
- Rick Abell - consultant
- John Griffin - consultant
- John McKeown – consultant

#### Technology & Tools:

- George Kamberov – Stevens
- Brent Cox – Stevens
- Wang Yang – Stevens
- Vinnie Simonetti\* – Stevens
- Yagiz Mungan\* – Purdue

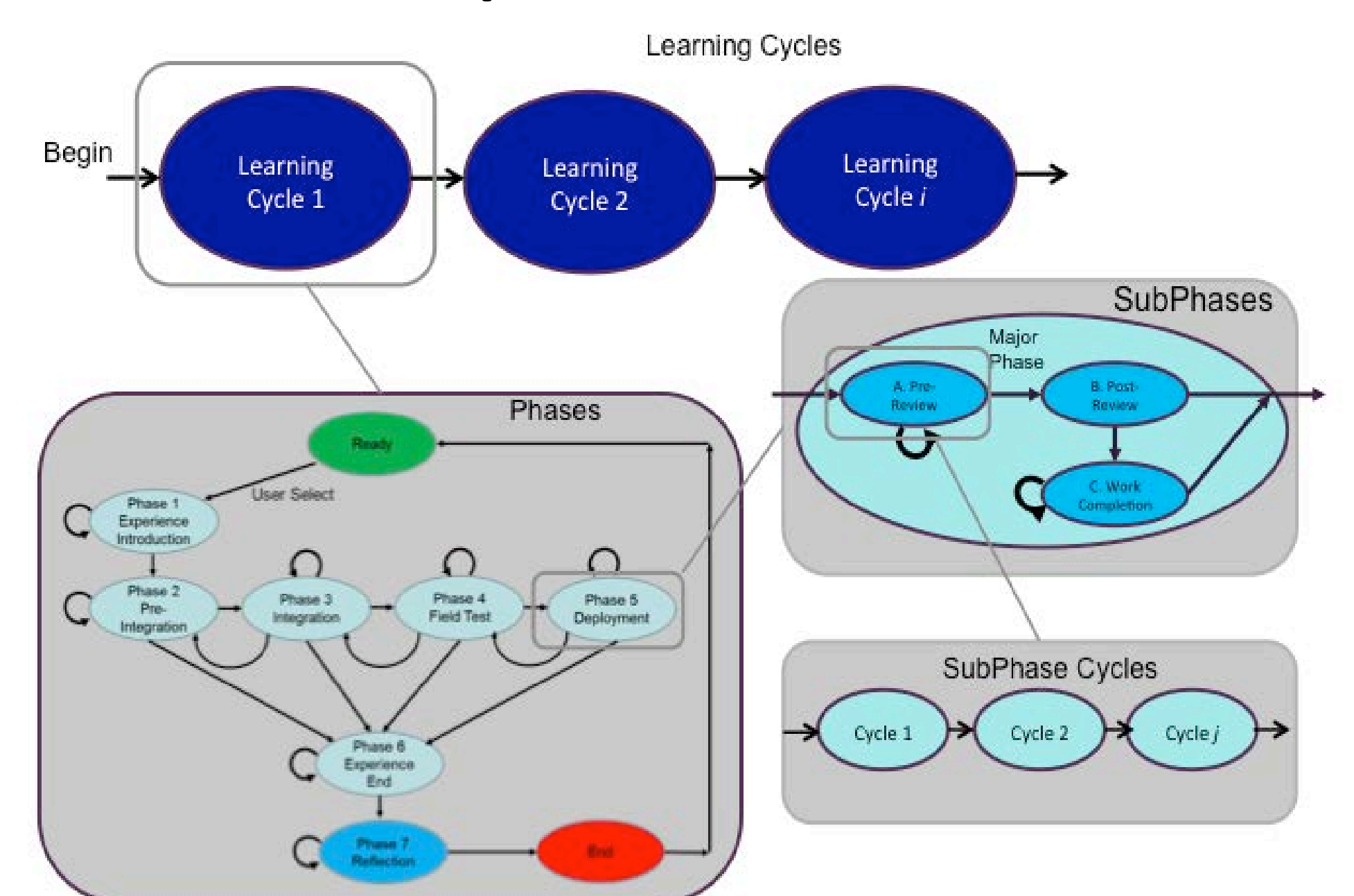
#### Evaluation:

- Bill Watson, CoPI – Purdue
- Pete Dominick\* – Stevens
- Dick Reilly\* - Stevens
- Dana Ruggiero\* - Purdue

#### Simulation:

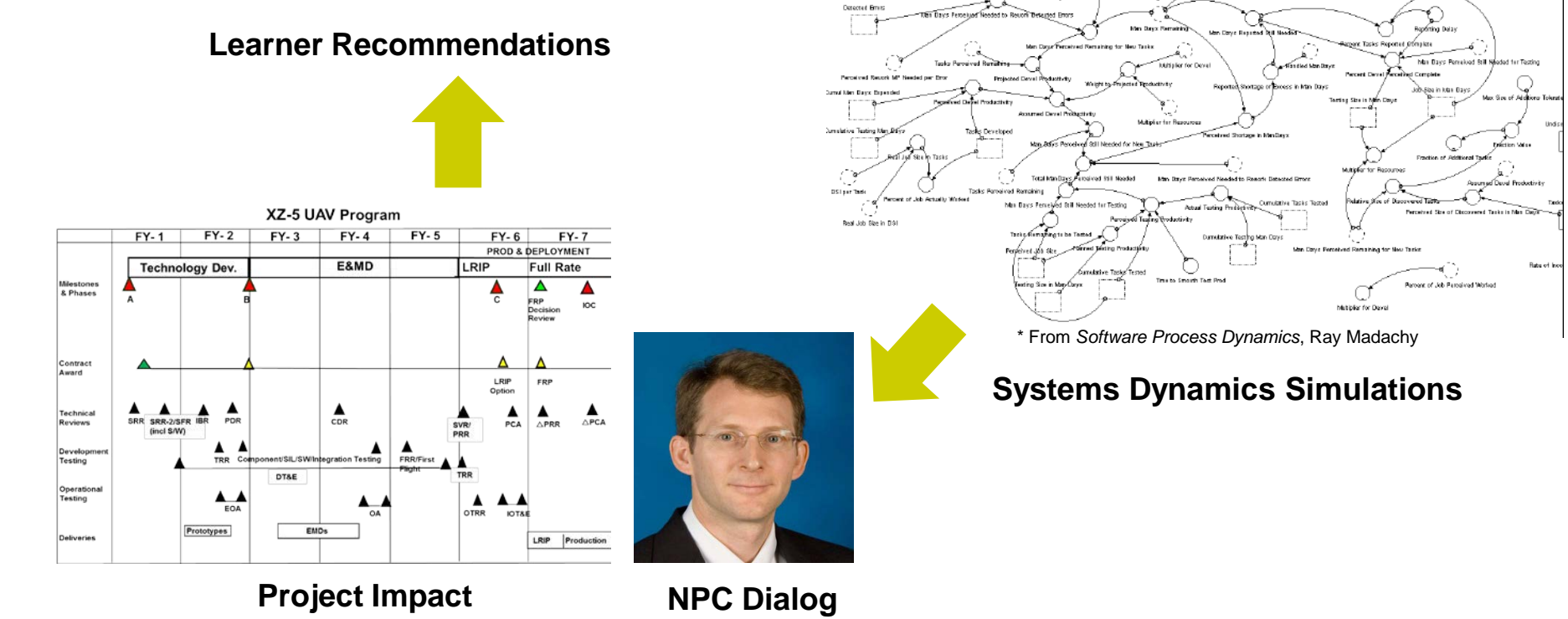
- Doug Bodner – G. Tech
- Subbu Ramanathan- G. Tech
- Pradeep Jawahar\* – G. Tech
- Kyle Crawford\* – G. Tech
- \* prior member

### Experience Phases



### Prototype Feedback Loop

Overall System	
Schedule:	<H,M,L>
Confidence Level to Achieve Program Schedule Goals:	<H,M,L>
Actions to address issues:	Nothing Required
Add/Remove senior/junior staff (%):	0
Anticipate schedule extension by xx months:	<xx>



### Future Work

#### Capabilities

- Expand prototype with additional capabilities
- Expand set of challenges and landmines
- Include cost objectives
- Include enhancements based on learner feedback
- Add features to user desktop

#### Development Productivity

- Improve content creation and development tools
- Dialog authoring
- Artifact creation
- Event descriptions and triggering
- Make Open Source Ready
- Documentation
- Source control and defect tracking
- Port to open development environment

#### Evaluate Learning Efficacy

- User Feedback
- Solicit and analyze learner self-evaluations
- Outcomes and Learning Assessment
- Establish outcomes assessment plan
- Pilot with target learners
- Measure effects on student performance
- Evaluate effect on student learning

### Multi-Threaded Java Server Architecture

