Technical Core: Biomedical Problem Solving Environment (SCIRun/BioPSE)
Background

Traditional Methods
• Disjoint tools
• Scripts
• Manual iterations

Problem Solving Tools
• Libraries
• Interpreters (MATLAB, IDL)
• Visual programming (dataflow)
• Computational steering
Background

Specific Aims

• Accessibility and Usability
  – PowerApps, GUI-less, web-based SCIRun, short time to get up-and-running

• Integration and Extensibility
  – Bridging, enabling other apps to call ours, adding expertise rather than just “wrapping”

• Performance and Control
  – Regression testing, check-pointing, high-performance apps, large datasets
Methods

Software Development Process

• Development and release cycles
• User-focused documentation
• Regression testing

Links to Collaborations

• Better software tools for all of our collaborators
• Build technologies and tools to meet users’ needs (not vice-versa)
• PowerApps to match workflows
• Support for complicated apps and enormous data
Progress / Results to Date

(Lots More Detail in our Annual Report)

Some Highlights:

• “The Four Big Ones”
  – Core encapsulation
  – Regression testing
  – Segmentation pipeline
  – Meshing pipeline

• OSX Intel port
• Windows port
• More bridges (TetGen, afront, ITK, LONI, …)
• Dataflow networks now saved as XML
• Higher order basis functions (mod/sim/vis)
• Port caching
Goals for the Coming Year

PowerApps
- New and reworked
- Workflow front-ends
- Dynamic construction, editing

More ITK Filters
- Embed expertise

More Regression Tests

More Bridges
- Tighter integration with Slicer

First Release of New System in November