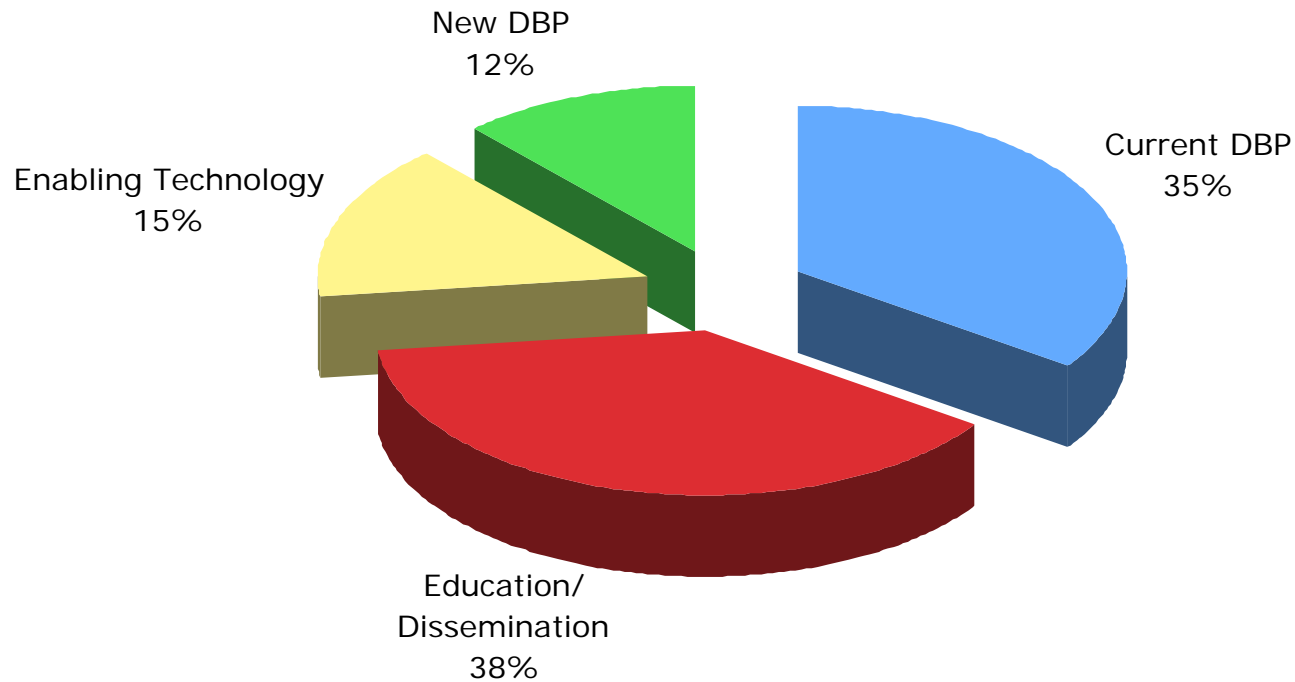


Home run synthesis

Group lead

David Paik

Home Run Clustering



Home Run Clusters

- Clusters
 - Current DBP
 - New DBP
 - Education/Dissemination
 - Enabling Technology (repl. Infrastructure)
- Entirely New?
- Results Soon?
 - Already proposed home runs OK, kind of like Babe Ruth calling his home run at the plate

Themes and Issues

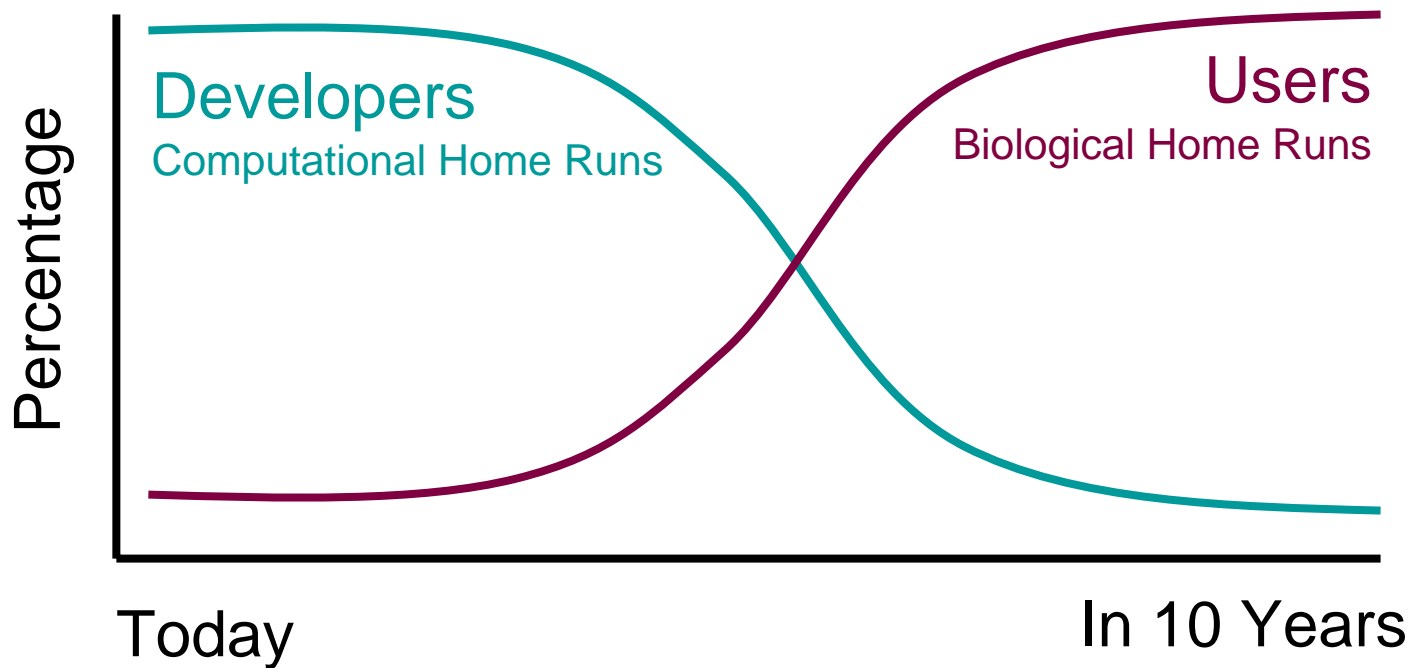
- Coarse-graining and Multi-scale
- Intuition came up
 - In contrast to quantitative, hard science
- Infrastructure
 - Can infrastructure be a home run?
 - Can too much concentration on infrastructure kill a project?
 - "Just in time" infrastructure

Themes and Issues

- Ease of Use vs. Danger of Powertools
 - Types of Misuse/Abuse
 - Scientific validity
 - Clinical usage
 - Who is the Simbios community?
 - Community of developers (NAMIC)
 - Community of users (Simbios)
 - **Are we responsible for protecting users from bad simulations?**

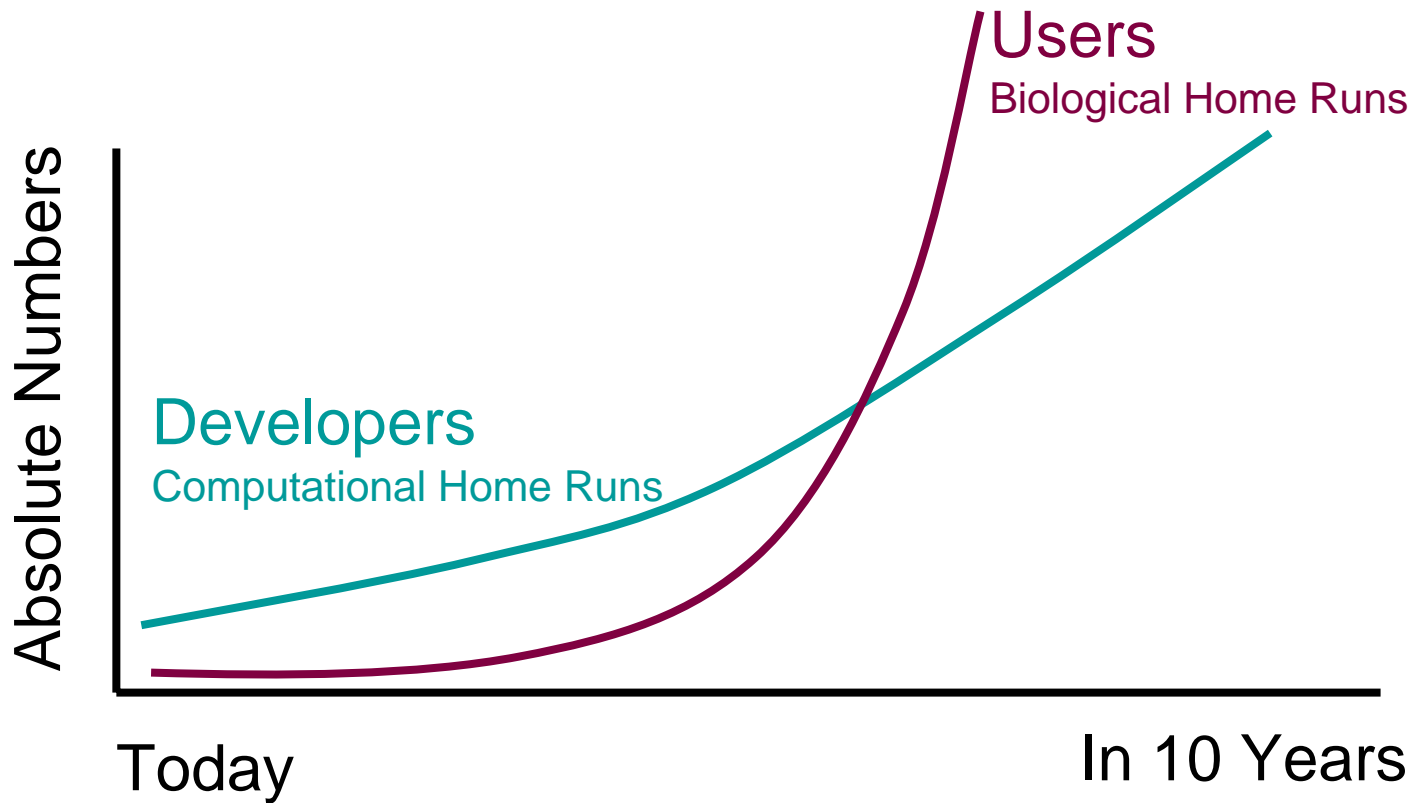
Simbios Community

- Who are our users today and in 10 years?



Simbios Community

- *Graphs should always increase!*



Themes and Issues

- Convincing the Skeptics
 - Is simulation relevant to biology?
 - Can models and results be extrapolated?
 - Is there external validity?
- What is the relationship of experimental and computational science?
 - "Computational Dynamics Paradox"
 - Need answers to create a simulation
 - Need answers to validate a simulation

Themes and Issues

- Breadth vs. Depth
 - Cover all relevant physical phenomena?
 - Wider draw for biologists
 - Soundness & *completeness*?
 - Stick to classical dynamics?
 - Quantum mechanics relevant?
 - Does this cover all the important ground?

Themes and Issues

- Push in what direction?
 - Small
 - Quantum mechanics?
 - Big
 - Ecology, evolution?
 - Mesoscale
 - Cellular and tissue level
 - Multi-scale
- Should we swing for the fences?