

3DVC_Friday Afternoon - CommunityStatement_BlueGroup

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Enable cell biologists to think more deeply about the problem they are trying to solve.

Virtual cell biology laboratory

Assemble pieces, parts

Construct modules

Cell behaviors

Functional aspect

Bridging the gap between computation and experiments

Simulations

Grand challenge

Assemble something that wouldn't otherwise be assembled

Accelerate

Deriving cell behavior from first principles

Can't do now: Coupling simulations that look at different scales of space and time

Build a system that allows representation of whole cells so that within that Google cell you can operate across all of the spatial and temporal scales that represent the functions of the cell in its ecosystem.

Build an artificial cell complete with structural, temporal and spatial...

In silico representation of everything that we know

Build a scaffold (framework) that enables the community to assemble all knowledge about a cell from molecular structure to its entire organization... crack the cell nucleus ... enable work on all time scales from picoseconds to lifetimes... gives control of processes in the cell...

Build a symbiotic environment where knowledge would accumulate...

Multi-scale

Build a nucleus...an asset to build on

Plug & play models

Examples as sidebars

M.E.: Costco model. Go shopping. Take data out, use your own staff & codes to build a story. Not very useful.

Use tools on site to enrich database. Leave a trail.

Framework and tools facilitate...

Resource of resources...

Mega resource...

Enable inspectability...

Perturbation for experiments...

Resource should be sustainability.

