

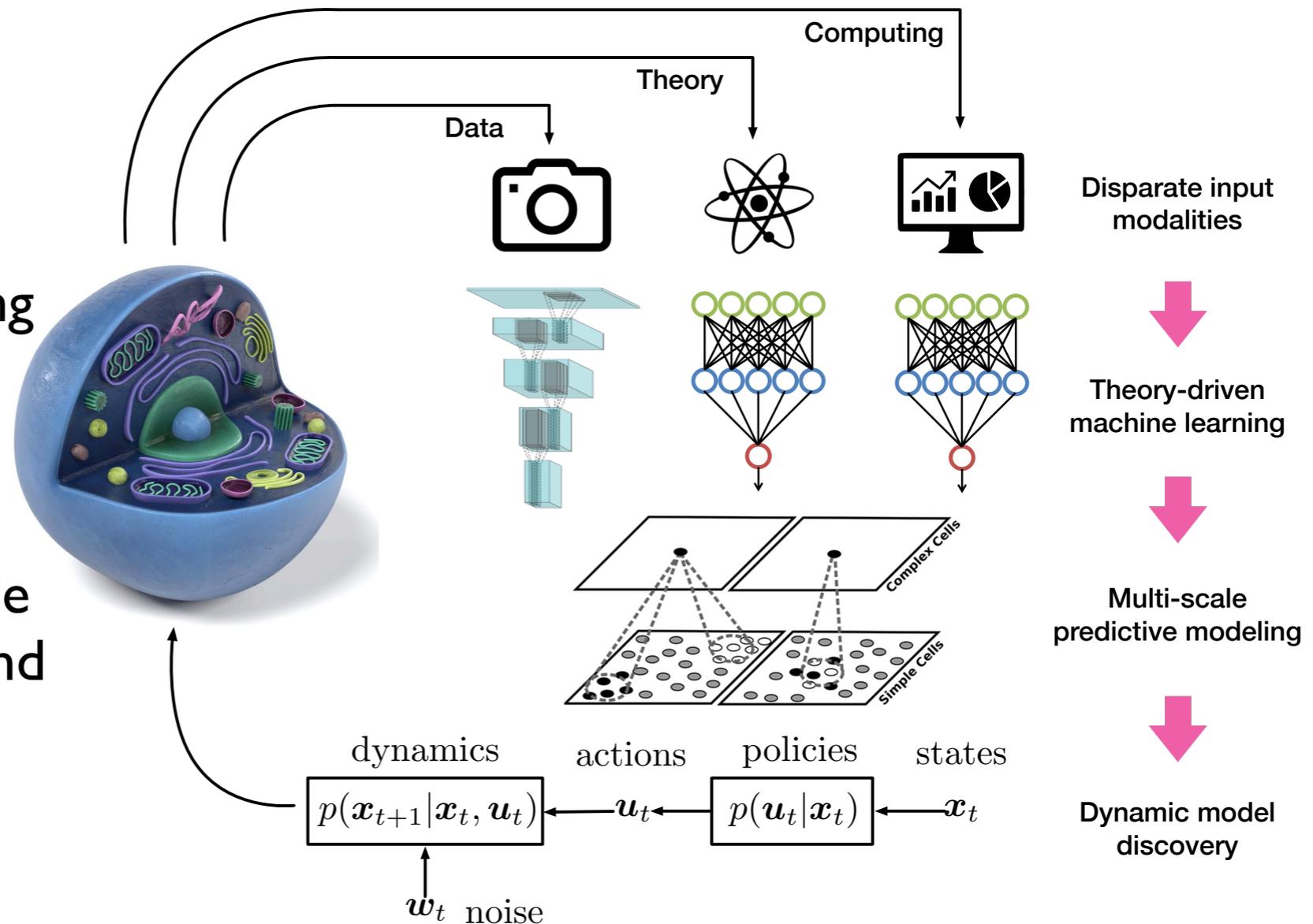
# Theme 4: Theory-driven Approaches

Organizers: Bill Cannon (PNNL), Paris Perdikaris (Penn)

*“Theory-driven machine learning seeks causality by integrating prior knowledge and big data”*

How to leverage structured physical laws and mechanistic models as informative prior information in a machine learning pipeline?

How to leverage machine learning to discover interpretable models, elucidate mechanisms and distill causality?



## Keynote Lectures (Friday, 11am-12.30pm):

1. *Simulation-assisted machine learning*, **David Craft**, Harvard Medical School.
2. *Covariant neural network architectures for learning in physics and chemistry*, **Risi Kondor**, University of Chicago, Senior Researcher at the Flatiron Institute