



WINNING PROPOSAL

Modeling the Intersection of Evolution and Physical Processes to Explain the Origin of Biological Complexity

DARPA Grant
Awarded in Spring 2020

GRANT WINNER

Shailesh Date, Ph.D.
Computational Biology

Laboratory for Research
in Complex Systems

“Polyplexus is an amazing platform that introduces a new and very unique method of scientific communication, through micropublications and conjectures. Because of its innovative nature and ability to integrate across disciplines, Polyplexus is already impacting how the scientific community postulates, interacts and builds projects around new concepts.”

HOW

Collaborating Across Areas of Expertise and Institutions

Involved more than 35 Conjectures and 43 Evidence μ Pubs by 17 Plexors from across academia, labs and industry

Combined six fields of study including genetics and applied math with expertise in information theory and evolutionary biology



WHAT

Disrupting the Status Quo

- Uses computational and wet lab approaches to elucidate first principles, properties and drivers of complexity
- Develops synthetic biology tools to manipulate and tune complexity within biological systems
- Designs new systems with novel physiological, morphological, biochemical and genomic features

WHY

Powering Research Sponsors

Benefits DARPA research in:

- Discovery and development of pharmaceuticals for battlefield medicine
- Force protection solutions
- Advancing understanding of the role of complexity in the life sciences