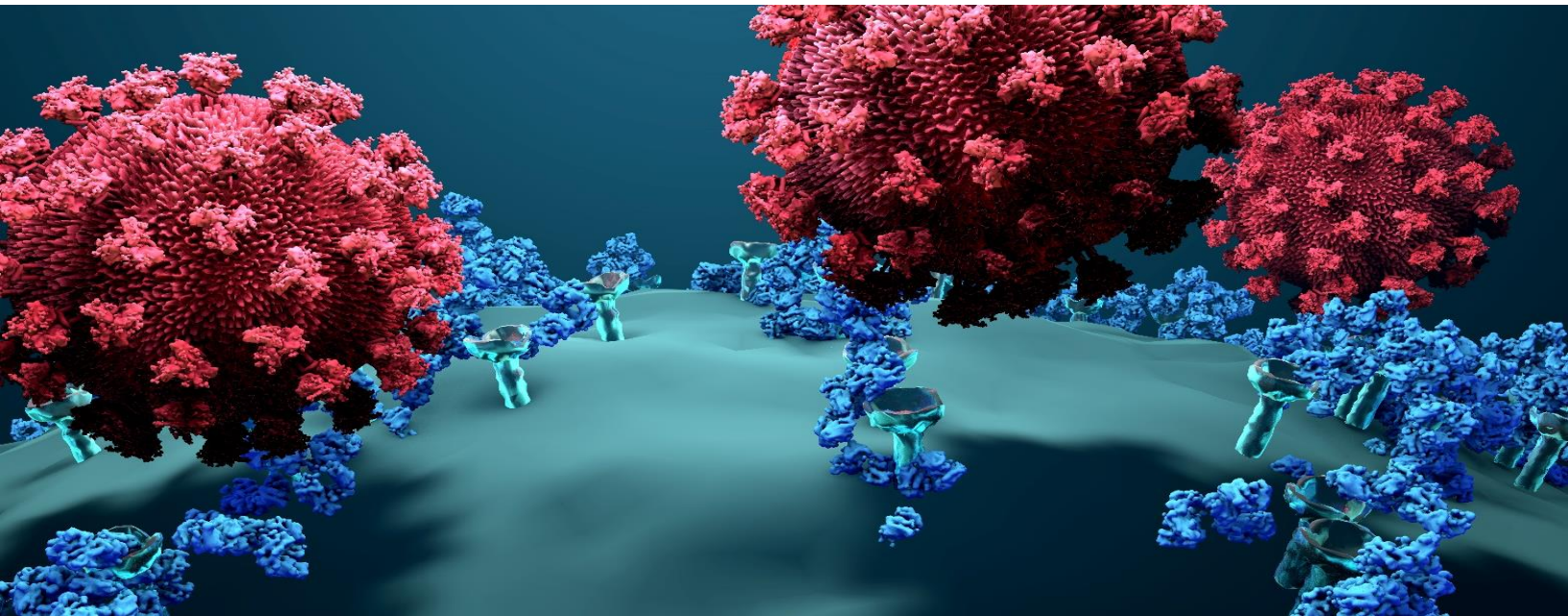# Computational Biology

Characterizing Biological Systems

MITRE's in-house capabilities for computational biology include expertise, tools, and databases that enable identification and characterization of biological systems. These capabilities allow MITRE to help address critical U.S. government challenges related to detecting biological threats, evaluating unknown organisms, and identifying the provenance of biological products. Through advanced prediction and modeling capabilities, MITRE's computational biology infrastructure further enables characterization of molecular interactions that drive cellular processes including those associated with medical countermeasures and biosensing applications.

Biological System Design

Beyond identifying and characterizing biological systems, MITRE's computational biology tools and expertise can help facilitate the design of novel biological components and systems. By leveraging advanced approaches in machine learning, multi-omics, and pathway modeling, MITRE can help the U.S. Government develop biological molecules and organisms that address key mission needs such as those related to advanced therapeutic development and environmental bioremediation. MITRE's computational capabilities are integrated with and complemented by MITRE's biological laboratories which provide experimental validation of computational predictions and functionality enhancement through iterative design, build, test, and learn cycles.

For information about MITRE's computational biology expertise and capabilities, e-mail bio@mitre.org.

MITRE experts apply cutting-edge computational biology techniques to characterize and design biological systems.

MITRE's mission-driven teams are dedicated to solving problems for a safer world. Through our public-private partnerships and federally funded R&D centers, we work across government and in partnership with industry to tackle challenges to the safety, stability, and well-being of our nation.

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