Russell Lab

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We study nucleic acids and control by proteins. See more about our research projects below!

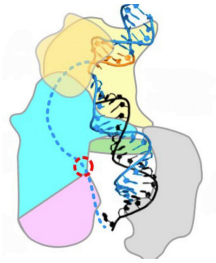
Research Projects

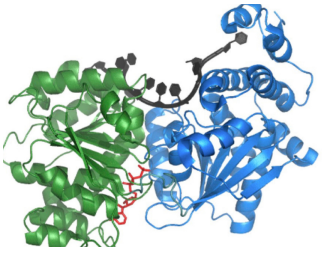
RNA Folding

- How do structured RNAs overcome electrostatic repulsion during folding?
- Can folding kinetics and stability be controlled by RNA structural modules?

CRISPR-Cas Enzymes

- How is high specificity achieved in DNA targeting?
- How do RNA structure and sequence control assembly and processing by Cas12a?





RNA Helicases

- How do helicase proteins chaperone RNA folding?
- Do unknown partner proteins contribute to chaperone activity?

RNA and DNA G-quadruplex Structures

- How does a helicase protein disrupt G-quadruplex structures?
- Do G-quadruplexes control telomerase RNA folding and protein assembly?