

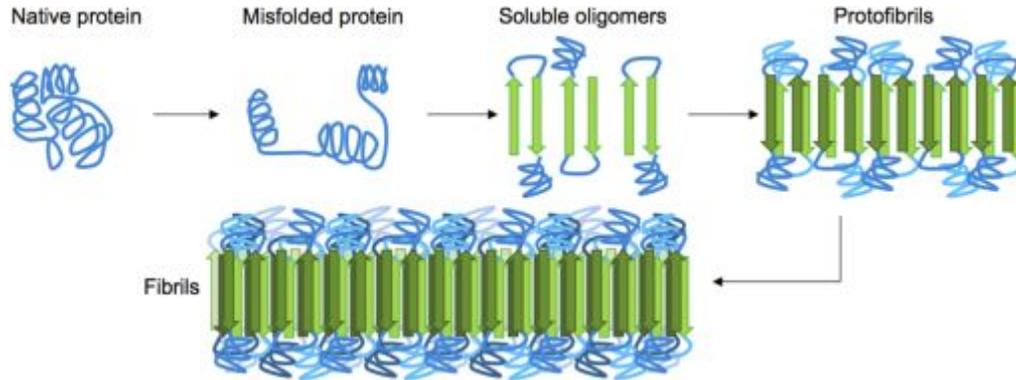
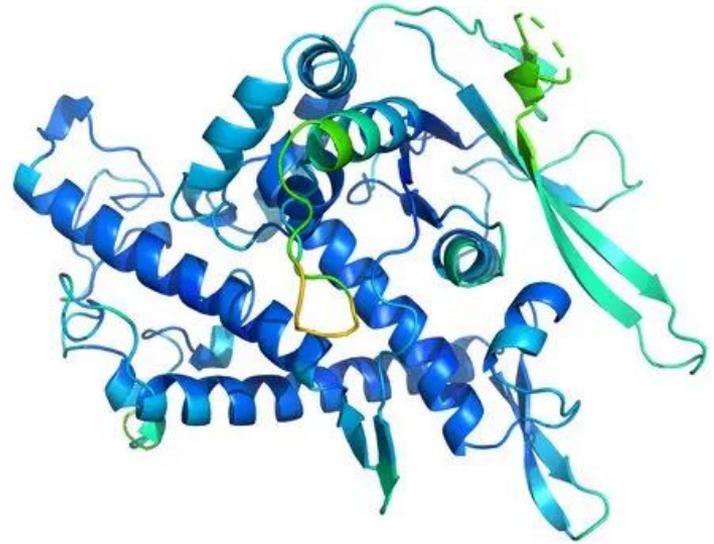


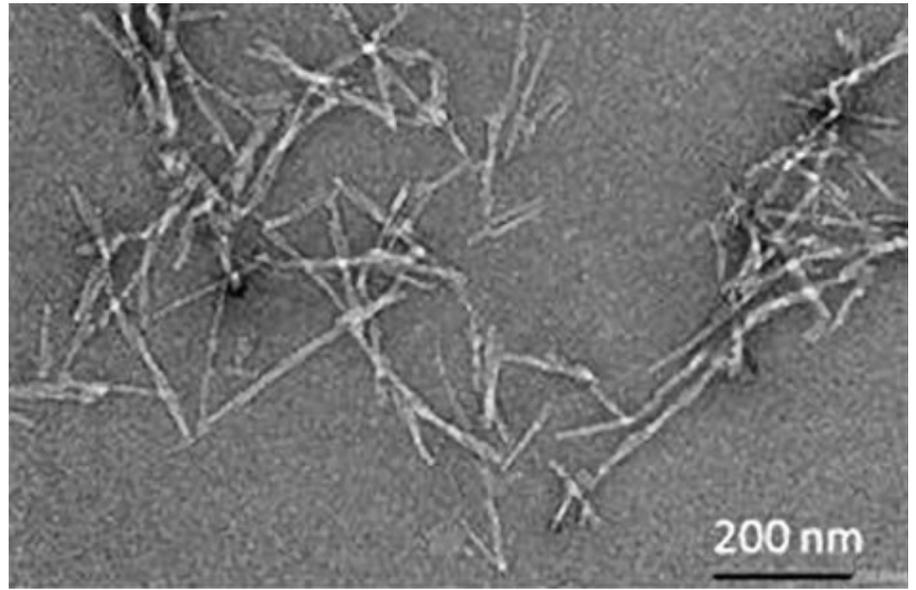
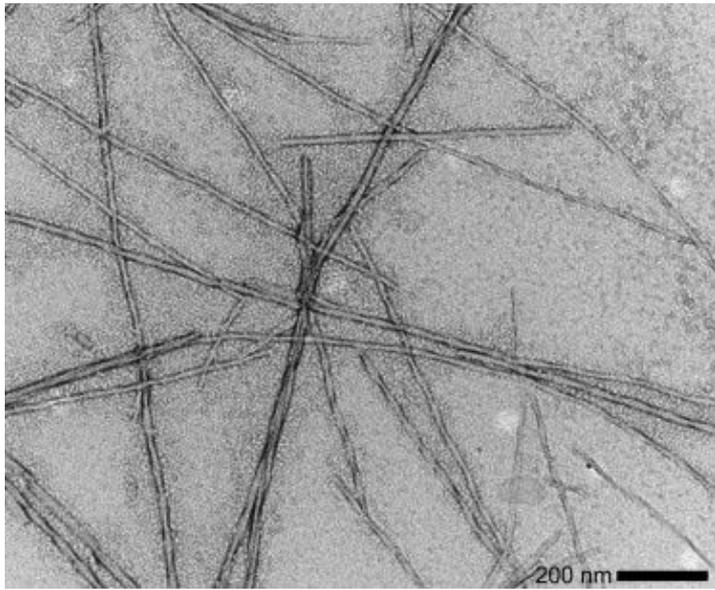
Simulating Amyloid Fibril Growth

Iris Horn
August 5th 2022

Amyloid Fibrils

- Structure
 - Misfolded Proteins
 - Mostly Beta Sheets
 - Insoluble



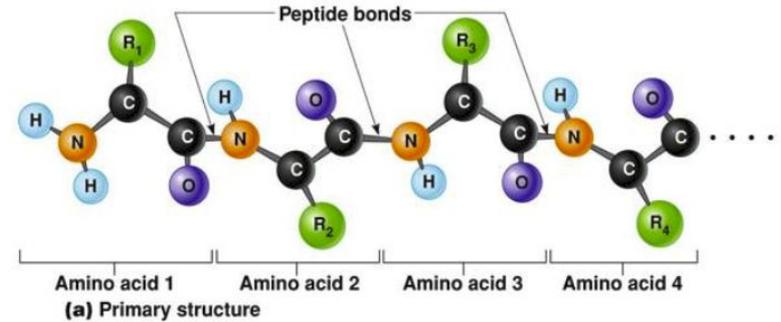


Amyloid Fibrils

- Amyloid Diseases
 - Alzheimer's
 - Huntington's
 - Type II Diabetes
 - Mad Cow Disease
 - Etc.

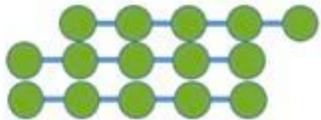
My Project

- Modeling Ordered and Disordered Growth
- Monte Carlo Simulation
 - Register / Overhang
 - Sequence Dependence
 - Polar and Hydrophobic Amino Acids

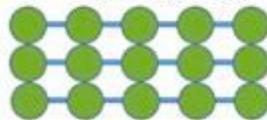


Disorder (Register)

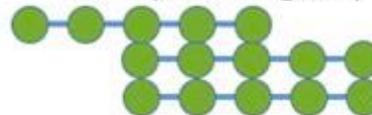
R = 1 (out-of-register)



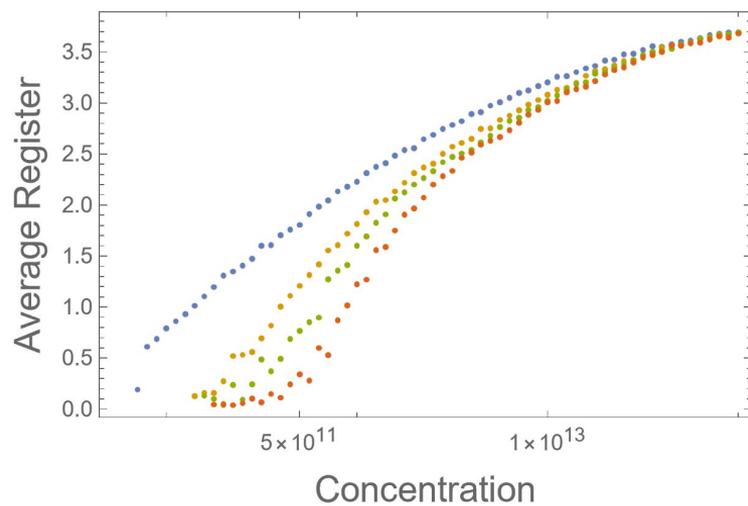
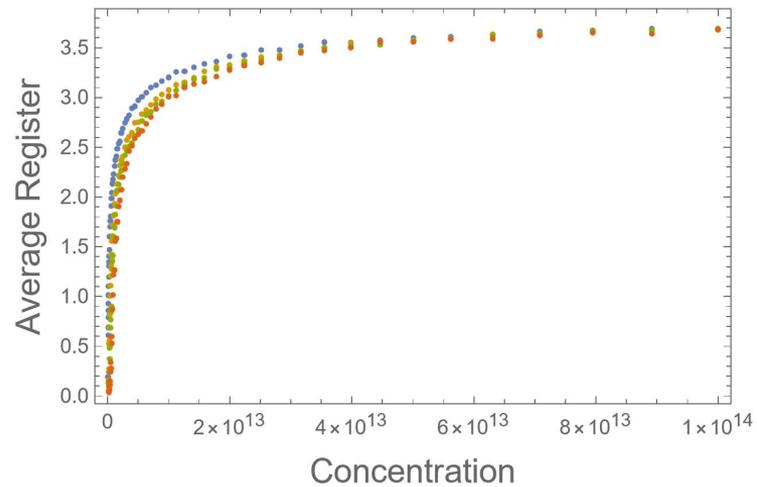
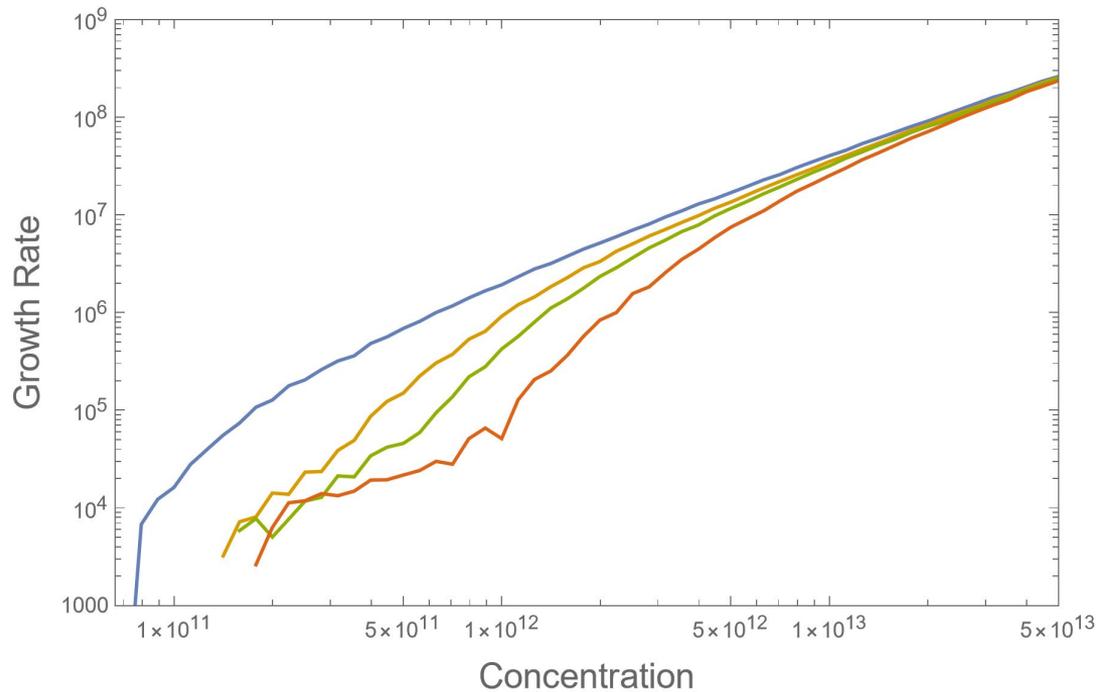
R = 0 (in-register)



R = -2 (out-of-register)



Results



Thank You!



KANSAS STATE
UNIVERSITY

College of Arts & Sciences
Department of Physics



Research Experiences
For Undergraduates

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