Determining mechanical properties of polymers by characterizing intermolecular interactions

By:
Ashley Cuatepotzo
Kenneth Wang
Ryan Flores
Jaime Aguirre

Mentor:
Anthony Karmis

PI:
Phil Pincus
Fictional character or a real possibility?
What we can do right now

Understanding the mechanical properties gives us an insight on how to achieve certain outcomes.
Understanding biological polymers can lead to advances in medicine.
How we are doing this?

- Polymers behave like a spring
- Spring stiffness is characterized by the spring constant
What is a Polymer?
How a polymer behaves
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5 \quad \rightarrow \quad \begin{array}{c}
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L = 6
\end{array}
\]
Monte Carlo Method
Effect of forces on polymer extension
Effect of Temperature on Spring Constant

![Graph showing the effect of temperature on spring constant](image)
Building a better model
Special Thanks

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PI: Phil Pincus

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