



## Protein Folding Services Section Home

### History

The study of protein folding began with Anfinsen's "thermodynamic hypothesis" in the 1960s, proposing that the native structure of a protein is determined solely by its amino acid sequence. The "protein folding problem" emerged when it became apparent that predicting a protein's three-dimensional structure was challenging.

### Christian B. Anfinsen

Awarded the Nobel Prize for work on protein folding.

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### Jane Richardson

Introduced the concept of protein motifs and ribbon diagrams.

### Nuclear Magnetic Resonance (NMR)

Providing insights into protein structures in solution.

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### Computational Approaches

Simulating folding pathways and energies.

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### Industrial Applications

1.

### Disease Mechanisms

Unveiling misfolding-related disorders like Alzheimer's and Parkinson's.

3.

## **Biotechnology**

Engineering proteins for industrial and medical purposes.  
5.

## **Protein-Based Therapeutics**

Producing recombinant proteins for medical treatments.  
7.

## **Agrochemicals**

Developing pesticides targeting insect proteins.  
9.

## **Bioinformatics**

Predicting protein structures for functional insights.  
11.

## **Vaccine Development**

Investigating protein structures for vaccine antigens.  
13.

## **Food Industry**

Enhancing food texture and flavor with modified proteins.  
15.

## **Biosensors**

Using protein folding changes for sensing applications.  
17.

## **Protein Evolution**

Studying protein folding changes during evolution.  
19.

## **Cellular Regulation**

Exploring how proteins fold in response to cellular signals.

## **Deep Learning and AI**

Predicting protein structures with greater accuracy.

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### **Intrinsically Disordered Proteins**

Studying proteins that lack a fixed structure.

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### **Unfolded Protein Response**

Investigating cellular responses to misfolding.

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