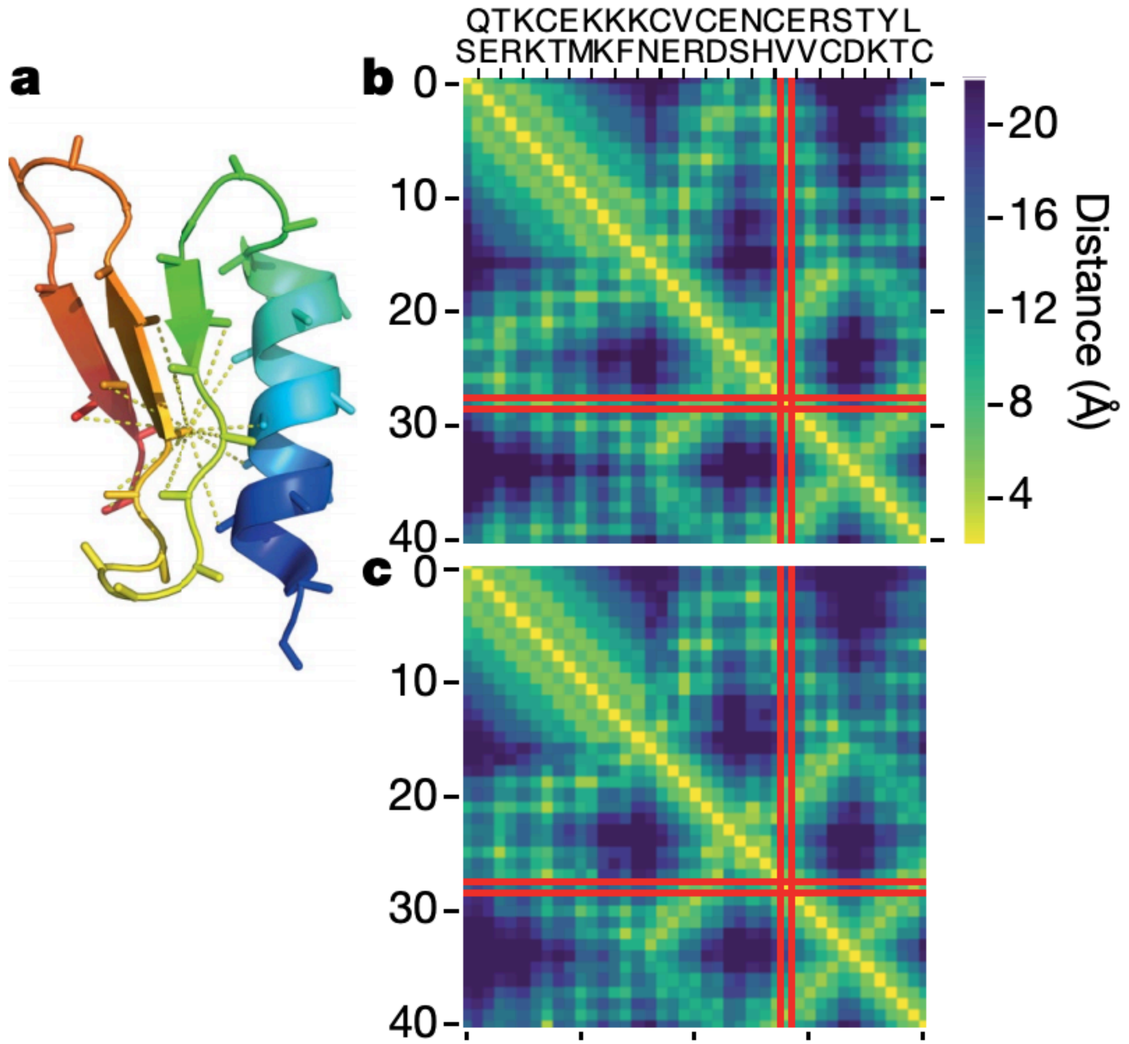
Supervised learning for predicting inter-residue distance

- Use databases of protein sequences with known structures (ie. known inter-residue distances)
- Build a supervised learning model that learns the relationship between amino acid sequences and inter-residue distance
- Predict inter-residue distance for protein sequences with unknown structures



Other examples of ML in basic sciences research

- Genetic engineering attribution: given a sequence of a plasmid, predict the lab that it originated from
- Molecular translation: given a picture of a chemical structure, translate it into its corresponding International Chemical Identifier text string
- A Deep Learning Approach to Antibiotic Discovery - Stokes et. al, Feb 2020, Cell.