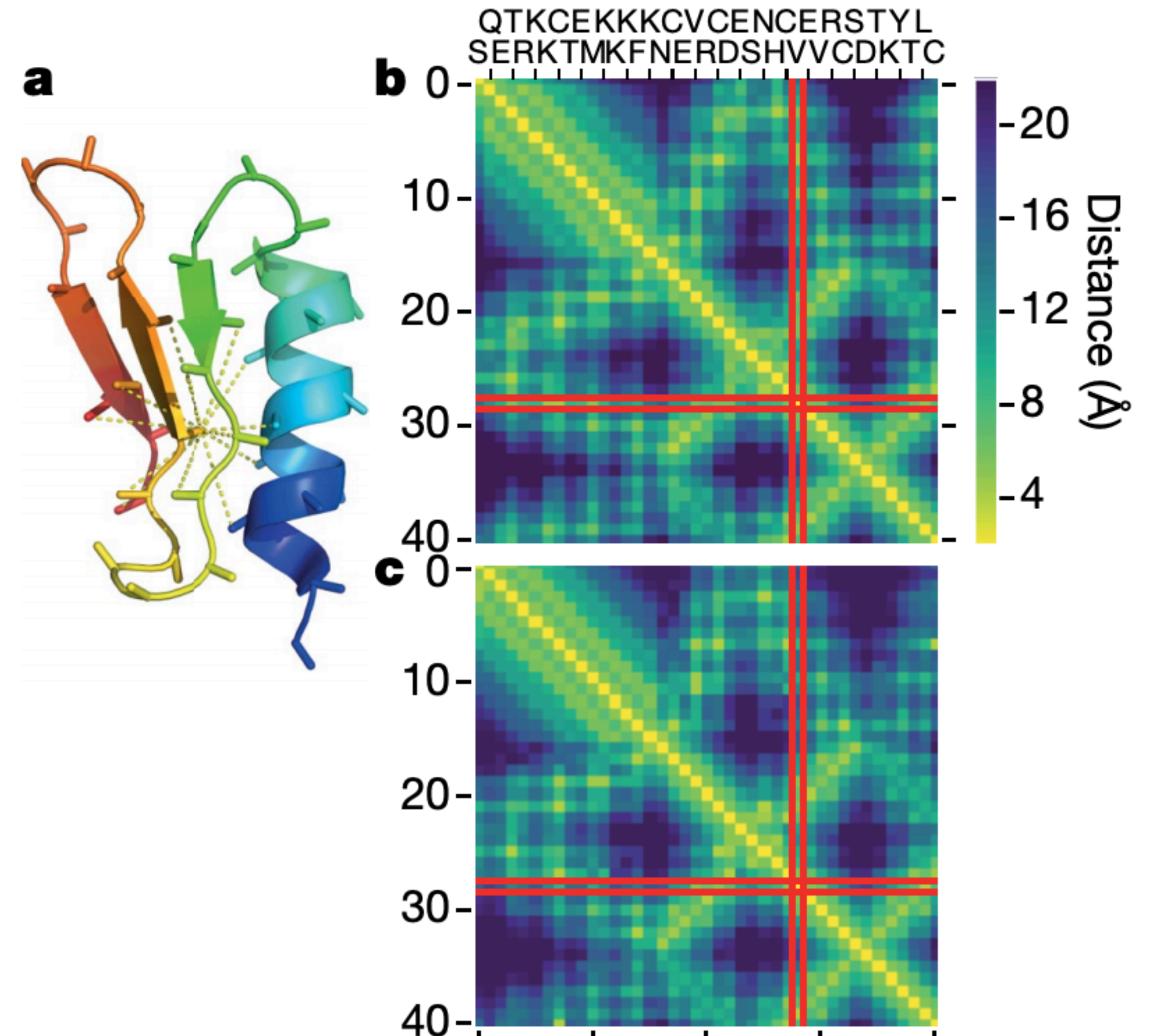# Supervised learning for predicting inter-residue distance

- 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

- <u>Genetic engineering attribution</u>: given a sequence of a plasmid, predict the lab that it originated from

- <u>Molecular translation</u>: given a picture of a chemical structure, translate it into its corresponding International Chemical Identifier text string

- <u>A Deep Learning Approach to Antibiotic Discovery</u> - Stokes et. al, Feb 2020, Cell.