

# 1 Introduction

Traditionally, studies of protein function have gone hand-in-hand with studies of protein structure. Proteins such as hemoglobin exhibit complicated behavior, such as cooperativity, by modifying their structure. The cooperative transition of hemoglobin from a closed to open state is well studied with the aid of crystallography and other structure elucidation tools. CITE

Of more recent interest is the behavior of molecules that cannot be crystallized. These proteins lack a defined structure and instead are capable of assuming many different conformations. Although examples of intrinsically disordered proteins (IDPs) have been reported since the 1970s, it was only in the past two decades that they became a focus of major research. [? ]

As our understanding of disordered proteins develops, so too will our understanding of a variety of cellular behaviors. These studies will elucidate aspects of signaling, cytoskeleton formation, clustered reactions, and really. I need a fourth function.. Investigations into how disordered proteins mediate each of these processes may lead to new drug targets or introduce new directions for synthetic biology.