USF NEXUS INITIATIVE 2018 AWARD RECIPIENT

Arjan van der Vaart

Elucidating the Structure and Dynamics of Intrinsically Disordered Spider Silk Proteins by NMR and Modeling Approaches

Before spinning, the constituent proteins of spider dragline silk are stored in a disordered state, which is relatively uncharacterized. Since spun dragline silk is a mixed crystalline-amorphous material, understanding of the subsequent aggregation process is also very challenging. This proposal will characterize the disordered state as well as the first aggregation steps in fiber formation through NMR, MRI and modeling techniques. The project will significantly advance our understanding of the structure and dynamics of spider silk and the self-assembly of complex hierarchical structures.

Partnerships:

Jeffery L. Yarger, Ph.D., Professor
Arizona State University (Phoenix, Arizona)

UNIVERSITY OF SOUTH FLORIDA
A PREEMINENT RESEARCH UNIVERSITY