

Dr. Thomas E. Angelini
Associate Professor
Department of Mechanical and Aerospace Engineering
University of Florida

PO Box 116250
Gainesville, FL 32611-6250
Tel: (352) 392-6438
t.e.angelini@ufl.edu



June 14, 2023

NSF-Funded Postdoctoral Position at the University of Florida

The Angelini and Graim labs at the University of Florida are seeking candidates to fill an open postdoctoral research position. The postdoc will work with a collaborative, interdisciplinary, and multi-institutional team on an NSF-funded project titled "Functional genomic dissection of biomineralization at multiple scales using a new marine model." Living organisms can produce materials with remarkable properties that result from the precise placement and regulation of their organic-inorganic constituents. One phenomenon of interest is biomineralization, which has evolved independently in numerous taxa. The "intrinsically disordered proteins" (IDPs) involved in biomineralization found in disparate taxa such as corals, echinoderms, sponges, and vertebrates are not homologous with one another. This convergent evolution provides a unique opportunity to understand key structural and functional features of IDPs at the molecular, cellular, tissue, and organismal levels. Our team will utilize a novel system, the sea anemone (*Nematostella vectensis*), to understand IDPs' intrinsic physical properties and their role in biomineralization. Integrated approaches from genetics, chemistry, proteomics, and engineering will shed light on how IDPs interact with scaffolding proteins and mineral precursor ions at the molecular level. As part of this multi-institutional project, the Angelini and Graim labs' postdoc will utilize machine learning approaches to train and automate a novel bio-microfabrication instrument to create biomineralizing structures with single-cell precision. Using this instrument, the postdoctoral scholar will systematically investigate the roles of structure, scale, molecular transport kinetics, and posttranslational modification of IDPs in biomineralization processes. This position is funded for three years. Applicants should contact Dr. Angelini (t.e.angelini@ufl.edu) or Dr. Graim (kgraim@ufl.edu).