

Faculty Name:

Allie Obermeyer

Faculty Email:

aco2134

Lab:

Obermeyer Research Group

Project Title:

Engineering protein condensates in vitro and in cells

Description:

Protein de-mixing has recently been implicated in the organization of cellular components. These phase separated membraneless organelles create distinct environments that are essential to cellular processes ranging from signaling to genome organization and gene expression. Despite numerous publications over the last decade investigating the structure and function of membraneless organelles, our understanding of this nascent field is limited; consequently, engineering the a priori formation and dissolution of membraneless organelles in vitro and in vivo remains a challenge. The proposed research will explore the use of electrostatic interactions to drive selective protein phase separation in to develop design rules for bio-orthogonal membraneless organelles. The projects will primarily focus on protein engineering - including cloning of newly designed protein sequences, heterologous expression of these proteins, purification of the designed proteins, and evaluation of their phase behavior in vitro.

Location of Research:

On-Site

of hrs/week:

40

Department/Program:

Chemical Engineering

Eligibility:

MS

To apply, please contact:

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