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RNA COMPARTMENTALIZATION BY LIQUID-LIQUID PHASE COEXISTENCE IN POLYELECTROLYTE SOLUTIONS

Prof. Dr. Christine D. Keating
Penn State University

Wednesday, 13/01/2021, 3 pm
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Abstract: Multivalent polyions can undergo a type of liquid-liquid phase separation called complex coacervation, producing membraneless compartments able to provide distinct microenvironments, accumulate solutes, and facilitate reactions. This presentation will focus on the physical chemistry of complex coacervate systems with an eye towards their feasibility as prebiotic RNA compartments, with particular attention to the effect of environmental wet/dry cycling and the impact of reducing polyion multivalency. While inspired by prebiotic contexts, the findings are generally relevant to coacervation-based encapsulation across applications in biomedicine, food science, and personal care products.

Bio: Christine D. Keating is a Distinguished Professor of Chemistry at Penn State University in University Park, Pennsylvania, USA. She is affiliated with the Materials Research Institute and the Huck Institute for Life Sciences. She received her B.S. in Biology and Chemistry from St. Francis College (Loretto, PA) in 1991 and her Ph.D. in Chemistry from Penn State in 1997. Her postdoctoral research was also at Penn State University and she joined the faculty in 2001. Dr. Keating's research interests combine materials science, colloid chemistry, and cell biology. She has authored over 100 scientific articles.

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