PCE_3 Seminar Series

Thurs, Dec. 9th

1 p.m. EST/10 a.m. PST

More information & registration:
prebioticchem.info/seminar-series/index.html

Saehyun Choi

Graduate Student

Pennsylvania State University, Keating Lab

"Prebiotic membraneless RNA compartments via complex coacervation"

McCauley Meyer

Graduate Student

Pennsylvania State University, Bevilacqua Lab

"Nucleotide-level resolution of RNA folding interactions within peptide-based complex coacervates"

Topical introduction by Christine Keating, Shapiro Professor of Chemistry, Pennsylvania State University

Saehyun Choi

Saehyun Choi earned a BS and a MS in Chemistry and Nanoscience from Ewha Womans University in 2013 and 2015. During her master's degree program, she worked on molecular dynamics simulations to study ice growth and polymeric models in crowded environments. While she was working on chromosome modeling projects, she was fascinated by the liquid-liquid phase separation phenomena found in biology and its potential linkage to the origins of life scenarios. After she started her PhD in Chemistry at the Pennsylvania State University in 2016, she started working with Prof. Christine D. Keating and collaborating with Prof. Philip Bevilacqua at Penn State to study experimental model systems of liquid-liquid phase separation. She is investigating complex coacervates composed of simple biomolecules as RNA compartments in various environments that could be relevant to hydrothermal vents. She is testing coacervates in hydrothermal vent experimental model systems in collaboration with Dr. Laura Barge at NASA JPL. She is interested in how the microenvironments of coacervates can be altered and kept in various geological conditions as RNA compartments. Since 2019, Saehyun Choi has been funded by the NASA FINEEST (Future Investigators in NASA Earth and Space Science and Technology) Fellowship. At the PCE3 Seminar Series, she will be presenting her recent findings of phase-specific RNA chemistry in multiphase complex coacervates composed of oligopeptides, and the robustness of complex coacervates as RNA compartments in high salinity and low pH mimicking hydrothermal vent conditions.

McCauley Meyer

McCauley "Mac" Meyer graduated with a B.S. in Biochemistry, and a B.A. in German Language from Lebanon Valley College. He is currently a fifth-year Ph.D. Candidate in Biochemistry, Microbiology and Molecular Biology in the lab of Dr. Philip Bevilacqua at Penn State. Mac's research focuses on studying RNA folding in condensates via Next-Gen sequencing approaches and ribozyme catalysis in both extant and prebiotic conditions. He works closely with the lab of Dr. Christine Keating at Penn State to study RNAs in condensates.

Christine Keating

Christine D. Keating is the Shapiro Professor of Chemistry at Penn State University. 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. Dr. Keating is a Fellow of the American Association for the Advancement of Science and recipient of the Penn State Faculty Scholar Medal. She has been named a Camille Dreyfus Teacher-Scholar, Beckman Young Investigator, Unilever Awardee, Sloan Fellow, and NSF CAREER Awardee. Her research interests combine materials science, colloid chemistry, and cell biology with a current focus on bioinspired compartmentalization by liquid-liquid phase coexistence. Her laboratory collaborates closely with Prof. Philip Bevilacqua on experimental model systems for prebiotic RNA compartmentalization and function in polyelectrolyte-based coacervate droplets.