SPRING 2023 CHEMISTRY SEMINAR SERIES

DR. EMIL KHISAMUTDINOV

Department of Chemistry

Ball State University, Muncie, IN

HOSTS:
DR. LOCKARD
DR. KUCHERYAVY
DR. ZHANG

ALL THOSE INTERESTED ARE WELCOME TO ATTEND

"RNA: Life's Versatile Molecule in Forms and Functions"

Friday, February 24, 2023, 11:30 AM
Life Science Center II, Room 130

Abstract: RNA molecules not only encode genetic information, but they also actively participate in various intracellular functions including bio-catalysis and regulation of gene expression, revealing it as a functionally versatile molecule, which has led to the hypothesis that RNA predates DNA and proteins. It is certain that RNA is capable of far more than it is typically illustrated in Francis Crick's central dogma of molecular biology. However, to achieve its function RNA is obligated to fold into a specific three-dimensional (3D) architecture. Inspired by these natural 3D RNA complexes, the development of artificial RNA molecules with fine-tuned biophysical and biochemical properties is highly demanded in the various fields including therapeutic RNA nanotechnology. In this seminar, my objective is to provide a flavor for the diversity of in vitro studies and approaches, used during my postdoctoral and independent careers, to harvest natural properties of RNAs and turn them into construction of numerous artificial Nucleic Acid nanodevices with potential therapeutic and diagnostic properties.

Biographical Sketch: Emil Khisamutdinov received his Ph.D. in 2012 from the Center for Photochemical Sciences at Bowling Green State University, Bowling Green OH. Then, he spent two years as a Post Doc at College of Pharmacy, University of Kentucky working with prof. Peixuan Guo. Emil began his independent career as assistant professor at the Department of Chemistry at Ball State University in Fall 2014. He's primary research interests include the use of computer-aided design and fabrication of de novo nucleic acid nano-architectures with the ultimate goal to develop new strategies for controlled self-assembly of functional RNA/DNA based nanoparticles with implications in areas as diverse as biosensing, and nanomedicine.

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