

UNIVERSITY OF RHODE ISLAND
Department of Chemistry
SEMINAR

3:00 PM, Monday, April 3, 2023
Room 105 – Beaupre Center

Rein V. Ulijn

***Director Nanoscience Initiative,
CUNY Advanced Science Research Center***

***Peptide-Based Complex
Supramolecular Systems***

HOST

Lorenzo Mosca
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Peptide-Based Complex Supramolecular Systems

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We are interested in learning how peptides can be used to create functional materials and adaptive systems using bottom-up approaches. We use integrated computational and experimental approaches to search and map the peptide sequence space and create guiding principles for the formation of gels, soluble nanofilaments, liquid condensates and complex, sequence-adaptive liquids. The talk will provide updates on three ongoing research directions: (i) Mapping and searching of peptide-sequence space for function; (ii) Design of peptide modalities that give rise to formation of fluorescent liquid condensates that are taken up by cells; (iii) evaporation-responsive peptide crystals; (iv) Experimental learning and memory using sequence-adaptive peptide mixtures. Overall, the research demonstrates that peptides, and mixtures of peptides, show significant potential as designable and tunable nanomaterials for a variety of applications in biomedicine and green nanotechnology.



Biography

Rein Ulijn is founding Director of the Nanoscience Initiative at the Advanced Science Research Center (ASRC) at CUNY, New York. He was recently awarded a Vannevar Bush Faculty Fellowship, the Department of Defense's most prestigious single-investigator award and supports basic research with the potential for transformative impact. Previous awards include the RSC Norman Heatley Medal, Royal Society Merit Award, Macro Group Young Researchers Medal and Fellow of the Royal Society of Edinburgh. He is the Einstein Professor of Chemistry at Hunter College of CUNY and previously held faculty positions at the University of Strathclyde and the University of Manchester, UK. He gained his PhD in biophysical chemistry from the University of Strathclyde with Peter Halling, and postdoc at the University of Edinburgh with Sabine Flitsch. He gained his MSc in biotechnology from Wageningen University, the Netherlands.