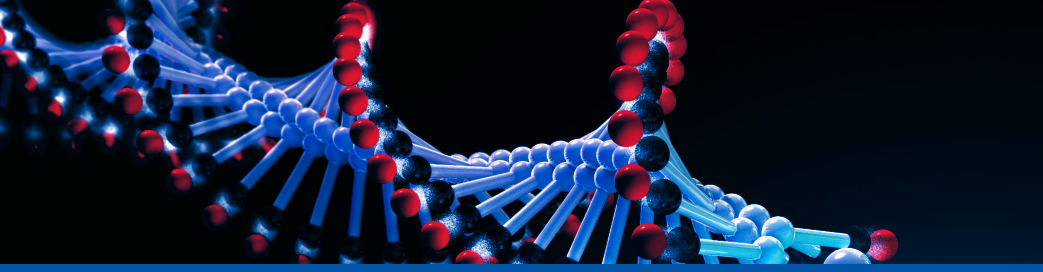


ADVANCED SCIENCE RESEARCH CENTER
THE GRADUATE CENTER
CITY UNIVERSITY OF NEW YORK

NANOSCIENCE INITIATIVE

asrc.gc.cuny.edu/nanoscience

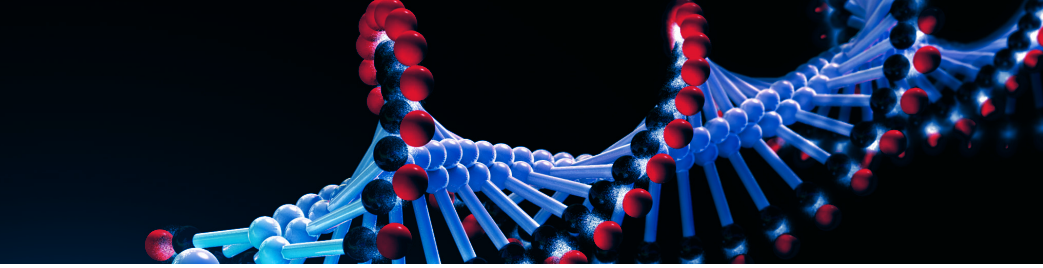
Mission

To serve as a world-leading center in the development of nanotechnology solutions that are inspired by and integrated with living systems. The initiative achieves this distinction by focusing on a "systems" approach to nanoscience design, which employs principles found in the living world to to benefit society through improved human health, environmental remediation, and industrial processes.

Initiative Overview

The Nanoscience Initiative operates on the ASRC's first and ground floors, which house state-of-the-art core facilities, including experimental labs for measurement, synthesis, and nanofabrication, and a 5,000-square-foot clean room that is among the best equipped on the East Coast.

The Nanoscience Initiative team, led by Professor Rein V. Ulijn, includes resident scientists, affiliated faculty from across CUNY, and a dynamic population of visiting scientists from the New York area and around the globe. The initiative has a distinct research vision focused on the study and application of dynamic nanoscale systems, from fundamental understanding to



applications ranging from biomedicine to food science to green energy.

Laboratories

Ulijn Laboratory

Professor Rein V. Ulijn's lab researches how the building blocks and molecular rules of life can be repurposed to develop bioinspired nanotechnology. His team is motivated by the notion that the sophisticated structures, devices, and machines of the living world are produced from just a few dozen simple building blocks that collectively represent an enormous interaction and functionality space. The Ulijn group is developing experimental and computational methods to search and navigate this space, resulting in design paradigms for new materials, sensors, actuators, emulsifiers, and catalysts. Applications are sought in environmental technology, sustainable bioplastics, and biomedical nanotechnology.

Chen Laboratory

Professor Xi Chen and his team focus on identifying the fundamental mechanisms behind materials' water-responsive behaviors and developing high-efficiency water-responsive materials for actuators and their newly developed evaporation energy–harvesting technique. Their work on water-responsive biomaterials and evaporation-driven engines could provide an additional green energy source that expands knowledge of the science of energy production and offers a path toward addressing society's power needs by working alongside nature.

Braunschweig Laboratory

Professor Adam Braunschweig and his group leverage organic chemistry, supramolecular chemistry, and materials science to address pressing medical, environmental, and electronic challenges. Specific projects involve the development of organic photovoltaics, the preparation of antiviral compounds, and 4D printing. Their research explores the interface of organic chemistry with biology and materials science to find new solutions to energy, health, and environmental challenges. Emphasis is placed on the rational design of target molecules and a fundamental understanding of their assembly and function.

DelRe Laboratory

Professor Christopher DelRe's team is focused on engineering new materials by manipulating the micro-environments of confined proteins and synthetic polymers. The team's work combines concepts from polymer science, protein science, and inorganic chemistry to engineer and unlock novel functionalities in materials that have applications in sustainable materials, health care and energy.