



The CUNY Advanced Science Research Center (ASRC) is a premier interdisciplinary research institute, purpose-built for scientific discovery, education and outreach that transcend traditional disciplinary boundaries.

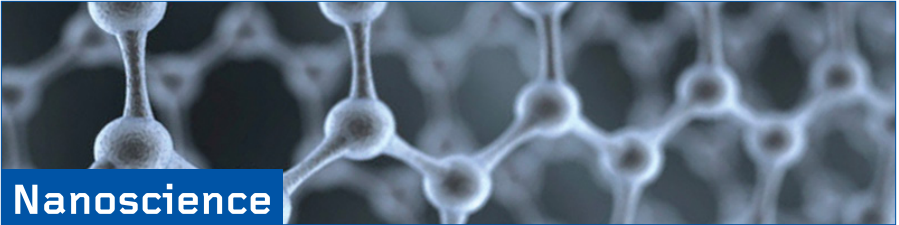
**ADVANCED SCIENCE
RESEARCH CENTER**
THE GRADUATE CENTER
CITY UNIVERSITY OF NEW YORK



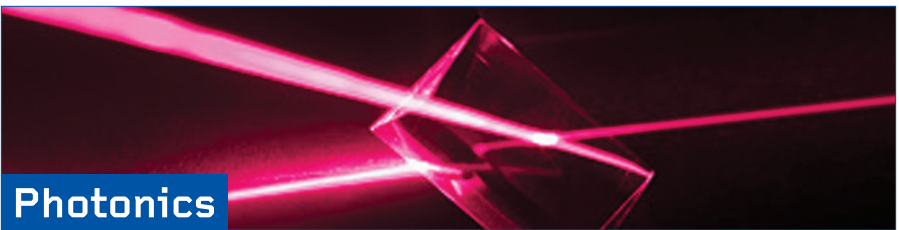
**10
YEARS**

Five Strategic Initiatives

The ASRC is designed around its five dynamic research initiatives. Each occupying an entire floor, the initiatives bring together established scientists, ambitious early-career researchers, and students to collaborate on expansive new research yielding practical benefits for society. They pursue fundamental research leading to breakthrough discoveries that in turn influence technology, medicine, environmental management, and more.



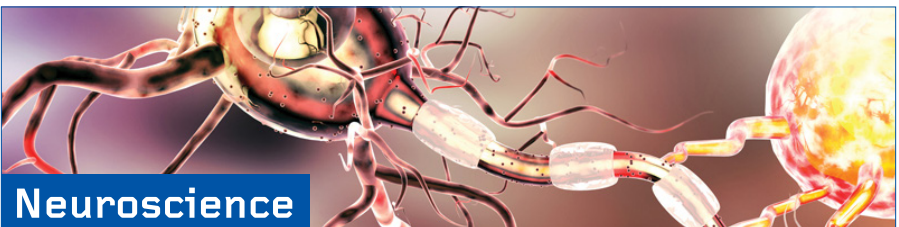
Exploring on the tiniest scale, using the living world for inspiration to create new materials and devices that advance fields ranging from biomedicine to energy production



Discovering new ways to control light, heat, radio waves, and sound for the next generation of optical computers, ultrasensitive cameras, and cell phone technology



Drawing on physics and chemistry, exploring biology at the molecular and cellular levels, and ultimately identifying new ways to treat diseases

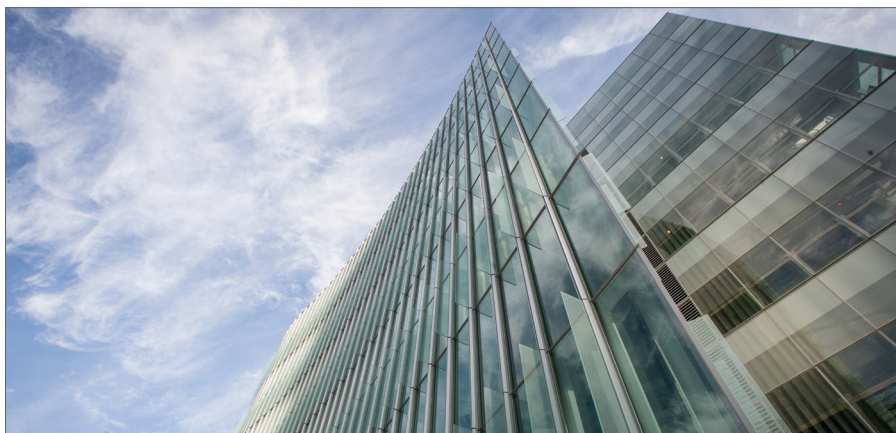


Understanding how metabolic signals, physical forces, environmental cues, and social experiences induce molecular changes in brain cells, with the goal of developing novel diagnostic tools and therapeutic approaches to cure neurological and psychiatric disorders



Addressing urgent environmental challenges with cutting-edge research, sensor technology, and interdisciplinary solutions for local and global actions

A New Era of Science



Located in New York's Harlem neighborhood, the striking, 200,000-square-foot ASRC building embodies a bold vision for the future of scientific innovation. At the center's core is a world-class facility designed to inspire a novel approach to the scientific method itself—one that links talented and ambitious scientists with hundreds of top researchers from the 25 campuses of the City University of New York (CUNY) as well as colleagues within and far beyond New York City and state.

The ASRC was conceived to transcend the barriers that separate the traditional fields of science, incubating a collaborative culture among researchers in five increasingly interconnected disciplines: **nanoscience, photonics, structural biology, neuroscience, and environmental sciences.**



The ASRC's five research initiatives are directed by leading academic scientists. They are (left to right) Professor Patrizia Casaccia (Neuroscience), Professor Kevin Gardner (Structural Biology), Professor Andrea Alù (Photonics), Professor Rein V. Ulijn (Nanoscience), and Professor Charles Vörösmarty (Environmental Sciences).

Meaningful Impact

Research at the ASRC challenges old dogmas, addresses urgent global issues, and spurs innovation. Current areas of study range from Alzheimer's disease, multiple sclerosis, depression, and cancer to climate change, green energy technology, and computing and communication systems.

Over the past 10 years, researchers regularly published their results in leading journals (40 Nature, Science and PNAS papers), interacted with communities (over 2000 high school student visits), and raised more than \$140 million in research funding from government agencies as well as industry and private foundations.

A Catalyst for Education

The ASRC benefits from being part of the Graduate Center—a research-intensive R1 institution and CUNY's home for world-class doctoral and master's education and scholarship. With the ASRC's outstanding faculty and student researchers and unparalleled opportunities for innovative research training across disciplines, the Graduate Center is transforming public graduate education in the sciences.

Graduate Center doctoral and master's students conduct research at the ASRC as members of the five research initiatives and through the state-of-the-art equipment in the shared core facilities. Consistent with CUNY's mission, the ASRC is also committed to promoting undergraduate research and welcomes undergraduate researchers from other CUNY campuses and schools into its labs and facilities.

Learn more about the Graduate Center's Ph.D. and master's programs in the sciences at www.gc.cuny.edu/sciences.

At the Core of Innovation

With the ASRC's high-end core facilities and expertise, scientists can expand the scope and scale of their research. Users from around the world leverage the ASRC's sophisticated equipment and the expertise of our outstanding research faculty to investigate new concepts and invent new technologies. The ASRC's core facilities provide researchers with the instrumentation and infrastructure to design and create materials and analyze biological samples and living tissues.

Our core facilities offer the following capabilities:

Nanoscience: imaging, nanofabrication, and surface science

Photonics: nanophotonics, radio-wave, and mm-wave facilities

Structural Biology: nuclear magnetic resonance spectroscopy, mass spectrometry, biomolecular crystallography, and biophysical characterization

Neuroscience: epigenetics, metabolomics, behavior, and human noninvasive brain imaging

Environmental Sciences: chemical and isotopic analysis, advanced sensor design and testing, microbial genomics, coastal modeling and synthesis, and environmental rooftop observatory

Learn more about the ASRC's core facilities at asrc.gc.cuny.edu/facilities.

Science in the Public Interest

The ASRC promotes scientific understanding across New York's diverse communities. Through a hands-on education center—the IlluminationSpace—and an array of events and programs, the ASRC makes science accessible to New Yorkers of all ages and backgrounds.

Learn more about the IlluminationSpace at asrc.gc.cuny.edu/illumination-space.



Redefining Scientific Research

Leveraging their unique scientific breadth, ASRC scientists have embraced the challenge of integrating diverse research fields, which normally span many orders of magnitude in terms of spatial and temporal scales, from atomic to global distances, and from picoseconds to centuries. This scientific mission is made possible by the creation of state-of-the-art research core facilities, which are available to CUNY faculty as well as researchers and entrepreneurs from around the world.





The Advanced Science Research Center (ASRC) at the CUNY Graduate Center is an internationally recognized center of excellence in interdisciplinary scientific research and discovery. The ASRC's world-leading scientists in nanoscience, photonics, structural biology, neuroscience, and environmental sciences have formed a distinctive research culture—one that is creative, collaborative, and convergent—within a state-of-the-art building, sparking innovative approaches to solve complex scientific problems, with implications for human health, technological advances, and society. The ASRC has rapidly established itself as a center of scientific excellence in New York City and beyond by connecting interdisciplinary science to urgent societal challenges. Its impact is evident in the volume and prominence of published research, the exceptional levels of grant funding it receives, and the use of its cutting-edge core facilities by thousands of researchers.

The ASRC is located at 85 Saint Nicholas Terrace, New York, NY 10031, USA.

For more information, visit asrc.gc.cuny.edu.

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The CUNY Graduate Center is a leader in public graduate education devoted to enhancing the public good through pioneering research, serious learning, and reasoned debate. The Graduate Center offers ambitious students nearly 50 doctoral and master's programs of the highest caliber, taught by top faculty from throughout CUNY—the nation's largest urban public university. Through its nearly 40 centers, institutes, initiatives, and the Advanced Science Research Center, the Graduate Center influences public policy and discourse and shapes innovation. The Graduate Center's extensive public programs make it a home for culture and conversation.

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