



Publications of the Week

Transferrin Receptor Targeting Chimeras for Membrane Protein Degradation

First Author: Dingpeng Zhang | Senior Author: Xin Zhou (pictured)
Nature | Dana-Farber Cancer Institute and Harvard University



Cancer cells require high levels of iron for rapid proliferation, leading to significant upregulation of cell-surface transferrin receptor 1 (TfR1), which mediates iron uptake by binding to the iron-carrying protein transferrin. Leveraging this phenomenon and the fast endocytosis rate of TfR1, researchers developed transferrin receptor targeting chimeras, a heterobispecific antibody modality for membrane protein degradation. [Abstract](#) | [Press Release](#)

Dopamine Dynamics Are Dispensable for Movement but Promote Reward Responses

First Author: Xintong Cai and Changliang Liu | Senior Author: Pascal Kaeser (pictured)
Nature | Harvard University



Dopamine signalling modes differ in kinetics and spatial patterns of receptor activation. How these modes contribute to motor function, motivation, and learning has long been debated. Here, researchers show that action-potential-induced dopamine release is dispensable for movement initiation but supports reward-oriented behaviour. [Abstract](#) | [Press Release](#)

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Awards

Italian Government Gives \$21 Million to BU-Led Effort to Develop New Antibiotics, Vaccines, Diagnostics

The Brink



A Boston University-led nonprofit that's taking on the growing threat of antibiotic-resistant bacteria has received new funding from the Italian government. Italy has awarded CARB-X (Combating Antibiotic-Resistant Bacteria Biopharmaceutical Accelerator), which is led by Dr. Kevin Outterson (pictured), \$21 million to help drive its work to advance new antibiotics, vaccines, and rapid diagnostics for infections that don't respond to existing treatments. [Read More](#)

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Local News

Gene Therapy for Adrenoleukodystrophy: Studies Find Both Risks and Benefits

Boston Children's Hospital



Cerebral adrenoleukodystrophy (CALD) is a devastating disorder caused by a mutation on the X chromosome. Two new studies in *The New England Journal of Medicine* led by Drs. Christine Duncan (pictured) and Florian Eichler confirmed that gene therapy can stall or ward off CALD's devastating effects when given before significant symptoms arise. [Read More](#)

Searching For Answers — One Brain at a Time

The Brink



Boston University's Chronic Traumatic Encephalopathy (CTE) Center, which is directed by neuropathologist Dr. Ann McKee (pictured), is a global leader in the study of the neurodegenerative disease. Families who donate their loved one's brain to the CTE Center are helping researchers push the boundary of what we know about neurodegenerative diseases. [Read More](#)

#WhyScience Q&A: A Microbiologist and Immunologist Finds Links Between Our Own Microbes and Disease Mechanisms

Broad Institute



Though his focus shifted over time, being a scientist was always the plan for Dr. Eric Brown (pictured) since kindergarten. "First it was dinosaurs and whales, and then it turned into birds, and then it turned into microbes," he said. The Broad Institute spoke with Dr. Brown about his experience as a staff scientist in the Xavier Lab where he works on microbes and the immune system. [Read More](#)

The Way Sensory Prediction Changes Under Anesthesia Tells Us How Conscious Cognition Works

MIT News



Our brains constantly work to make predictions about what's going on around us to ensure that we can attend to and consider the unexpected. A new study examines how this works during consciousness and also breaks down under general anesthesia. This study comes from Dr. Earl Miller's (pictured) lab at MIT's Picower Institute for Learning and Memory. [Read More](#)

Bat Cells Possess a Unique Antiviral Mechanism, Preventing the SARS-CoV-2 Virus from Taking Control

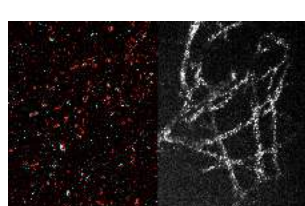
Whitehead Institute



Viruses are masters of stealth. From the moment a virus enters the host's body, it begins hijacking its cells. However, in bats this process unfolds differently. Since the onset of the COVID-19 pandemic, the lab of Dr. Rudolf Jaenisch (pictured) has been investigating the molecular basis of bats' extraordinary resilience to viruses like SARS-CoV-2. [Read More](#)

A New Method Makes High-Resolution Imaging More Accessible

MIT News



A classical way to image nanoscale structures in cells is with high-powered, expensive super-resolution microscopes. As an alternative, MIT researchers have developed a way to expand tissue before imaging it — a technique that allows them to achieve nanoscale resolution with a conventional light microscope. In the newest version of this technique, the researchers have made it possible to expand tissue 20-fold in a single step. [Read More](#)

NYBC Ventures Announces Formation of Board of Managers

Globe Newswire



NYBC Ventures, a specialized fund focused on investments in blood and cellular technologies, announced the formation of its limited liability company structure and the addition of four industry leaders to its newly-constituted Board of Managers. This critical step advances NYBC Ventures' mission of accelerating groundbreaking life science innovations and expanding New York Blood Center's influence within the blood and cell-related ecosystems. [Read More](#)

BU and Boston Medical Center Researchers Join Forces with GSK to Fight Lung Diseases

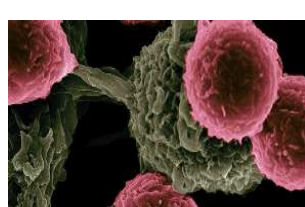
Boston University Chobanian & Avedisian School of Medicine



Researchers from the Center for Regenerative Medicine at Boston University and Boston Medical Center have announced a new collaboration with the global biopharma company GSK to advance innovative research focused on developing cutting-edge models to study and treat lung diseases like pulmonary fibrosis. This collaboration will be co-headed by Dr. Darrell Kotton (pictured). [Read More](#)

AvenCell Secures \$112M Series B to Flick 'Switchable' CAR-Ts in the Clinic

Fierce Biotech



AvenCell Therapeutics has secured \$112 million in series B funds as the Novo Holdings-backed biotech seeks clinical proof that it can generate CAR-T cells that can be turned "on" once inside a patient. The method is designed to treat blood cancers more safely and effectively than traditional cell therapies, according to the company. [Read More](#)

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Upcoming Events in Boston

- October 29
5:30 PM

Director's Dialogue with Uli Stolz: Chronic Disease at an Inflection Point
Whitehead Institute for Biomedical Research
- October 30
2:30 PM

BRI Lung Research Day
Marshall A. Wolf Conference Center
- November 1
9:00 AM

Broad Institute Machine Learning in Drug Discovery Symposium 2024
Broad Institute
- November 5
10:00 AM

Picture a Scientist: Film and Panel Discussion
Simmons University
- November 6
4:00 PM

Discovery and Implementation of Blood-Based Biomarkers For Multiple Sclerosis and Related Diseases
Online

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Science Jobs in Boston

- Associate Director/Director, Pharmacovigilance and Drug Safety**
Xenon Pharmaceuticals
- Postdoctoral Research Fellow, Cancelas Lab**
Dana-Farber Cancer Institute
- Research Fellow**
Mass General Brigham
- Global Project Lead, Immunology**
AstraZeneca
- Research Technician II, Anatomy & Neurobiology**
Boston University

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