



Publications of the Week

Prediction of Single-Cell RNA Expression Profiles in Live Cells by Raman Microscopy with Raman2RNA

First Author: Koseki J Kobayashi-Kirschvink | Senior Authors: Tommaso Biancalani (pictured), Jian Shu, and Aviv Regev
Nature Biotechnology | Broad Institute, Massachusetts General Hospital, and MIT



Single-cell RNA sequencing and other profiling assays have helped interrogate cells at unprecedented resolution and scale, but are inherently destructive. Here, researchers present Raman2RNA, a method to infer single-cell expression profiles in live cells through label-free hyperspectral Raman microscopy images and domain translation. [Abstract](#) | [Press Release](#)

Non-Invasive Detection of Neuroendocrine Prostate Cancer Through Targeted Cell-Free DNA Methylation

First Author: Gian Marco Franceschini | Senior Authors: Francesca Demichelis and Himisha Beltran (pictured)
Cancer Discovery | Dana-Farber Cancer Institute and Fred Hutchinson



Neuroendocrine prostate cancer is an aggressive subtype of treatment-resistant prostate cancer. Early detection is important, but the diagnosis currently relies on metastatic biopsy. Researchers describe the development and validation of a plasma cell-free DNA targeted methylation panel that can quantify tumor fraction and identify patients with neuroendocrine prostate cancer noninvasively. [Abstract](#) | [Press Release](#)

Long-Term Labeling and Imaging of Synaptically Connected Neuronal Networks *In Vivo* Using Double-Deletion-Mutant Rabies Viruses

First Author: Lei Jin | Senior Author: Ian Wickersham (pictured)
Nature Neuroscience | Broad Institute and MIT



Rabies-virus-based monosynaptic tracing is a widely used technique for mapping neural circuitry, but its cytotoxicity has confined it primarily to anatomical applications. Here, researchers present a second-generation system for labeling direct inputs to targeted neuronal populations with minimal toxicity, using double-deletion-mutant rabies viruses. [Abstract](#) | [Press Release](#)

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Awards

Three Honored with 2023 School of Science Teaching Prizes

MIT News



The MIT School of Science has announced the winners of its 2023 Teaching Prizes for Graduate and Undergraduate Education. The prizes are awarded to School of Science faculty members who demonstrate excellence in teaching. Winners are chosen from nominations by their students or colleagues. This year's winners are Drs. Roger Levy, David McGee, and Pulin Li (pictured). [Read More](#)

Prestigious Kirschstein Award Helps Fund MD/PhD Student's ALS Research

UMass Chan Medical School



Abigail Hiller (pictured), an MD/PhD student at UMass Chan Medical School, has received a Ruth L. Kirschstein National Service Award Individual Predoctoral Fellowship from the National Institute of Neurological Disorders and Stroke to study the role genes linked to Alzheimer's disease play in amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease. [Read More](#)

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Local News

Novo Nordisk Enters into Research Collaborations with Omega Therapeutics and Cellarity on Novel Treatment Approaches for Cardiometabolic Diseases

Novo Nordisk



Novo Nordisk has entered into separate research collaborations with Omega Therapeutics and Cellarity Incorporated. The Omega collaboration hopes to develop an epigenomic controller designed to enhance metabolic activity as a potential treatment for obesity management. The Cellarity collaboration aims to unravel novel biological drivers of metabolic dysfunction-associated steatohepatitis. [Read More](#)

UMass Chan Leads Multisite VA Study on Prism Adaptation Therapy for Spatial Neglect Following Stroke

UMass Chan Medical School



UMass Chan Medical School researchers affiliated with the VA Central Western Massachusetts Health Care System are leading a \$1.9 million multi-site Veterans Affairs merit review award study to close the gap in rehabilitation for patients with a disabling condition known as spatial neglect following right brain stroke. This study will be led by Drs. Kevin Houston (pictured, left) and A.M. Barrett (right). [Read More](#)

New Research Explores Intertwined Structures of Protein Involved in the Transfer of Biologically Essential Iron and Sulfur Clusters

MIT Biology



New research published in *Communications Biology* from the lab of Dr. Catherine Drennan (pictured) at MIT and the Howard Hughes Medical Institute focused on the structure and function of a protein called Met18. Met18 is part of a ubiquitous pathway to transfer clusters of iron and sulfur to client proteins in the cytosol and nucleus of cells. [Read More](#)

Novel Test Holds Promise for Detecting Parkinson's Disease Early

Brigham and Women's Hospital



Researchers from Brigham and Women's Hospital and the Wyss Institute have developed a molecular assay platform that they successfully applied to patient samples to detect and quantify a hallmark of Parkinson's disease. This study is a multidisciplinary collaboration led by Drs. David Walt, David Weitz, and Vikram Khurana (pictured). [Read More](#)

The Petri Dish: Comanche Raises \$75M; Life Sciences Training Center Opens

Boston Business Journal



The Petri Dish is a collection of life science news that may get overlooked with so much biotech business activity throughout Greater Boston. Recently, women's health saw a funding boost as Massachusetts companies developing fertility and preeclampsia treatments landed funding rounds. Also, a Boston-based biotech workforce training center officially opens and Outcome Capital expands its local life sciences practice. [Read More](#)

SmartLabs Announces \$48 Million Series C Funding to Advance Its Laboratory Infrastructure and Resourcing Solutions

PR Newswire



SmartLabs, the leading provider of flexible laboratory infrastructure and resourcing solutions, announced the raise of a \$48 million Series C financing. SmartLabs delivers fully resourced lab environments at enterprise-scale that offer multifunctional research and development spaces, vivariums, process development and pilot-scale suites, and cGMP capacity under one roof. [Read More](#)

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Upcoming Events in Boston

January 23 5:30 PM	Social Video Boot Camp: Crafting Compelling Content for Public Health Francois-Xavier Bagnoud Building
January 24 2:30 PM	NESBA BIO-SAXS Symposia Boynton Yards
January 26 11:30 AM	REDCap: Getting Started Online
January 30 - February 1 8:30 AM	7th DDR Inhibitors Summit The Colonnade Hotel
January 31 - February 2 10:00 AM	Symposium on Resolution of Inflammation in Medicine and Surgery Brigham & Women's Hospital

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Science Jobs in Boston

- Senior Associate Scientist, Translational Pharmacology**
Apex Systems
- Postdoctoral Associate, Sabeti Lab**
Broad Institute
- Scientist/Investigator, RNA Vaccine Process & Chemistry**
CSL Behring
- Scientist II, Immunology**
Zag Bio
- Senior Scientist**
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