Volume 7.11: March 24, 2025

Publications of the Week

Analysis of Human Urinary Extracellular Vesicles Reveals Disordered Renal Metabolism in Myotonic Dystrophy Type 1

First Author: Preeti Kumari | Senior Authors: Sudeshna Das *(pictured)* and Thurman Wheeler
Nature Communications | Beth Israel Deaconess Medical Center, Massachusetts General Hospital, Boston Children's Hospital, and Harvard Medical School

Chronic kidney disease and the genetic disorder myotonic dystrophy type 1 (DM1) each are associated with progressive muscle wasting, whole-body insulin resistance, and impaired systemic metabolism. The authors identify downregulation of metabolism transcripts *Phosphoenolpyruvate carboxykinase-1*, *4-Hydroxyphenylpyruvate dioxygenase*, *Dihydropyrimidinase*, *Glutathione S-transferase alpha-1*, *Aminoacylase-1*, and *Electron transfer flavoprotein B* in DM1. **Abstract | Press Release**

A Torpor-Like State in Mice Slows Blood Epigenetic Aging and Prolongs Healthspan

First Author: Lorna Jayne | Senior Author: Sinisa Hrvatin *(pictured)*
Nature Aging | Whitehead Institute, Harvard Medical School, Brigham and Women's Hospital, Dana-Farber Cancer Institute, Broad Institute, and MIT

Torpor and hibernation are extreme physiological adaptations of homeotherms associated with pro-longevity effects. Yet the underlying mechanisms of how torpor affects aging, and whether hypothermic and hypometabolic states can be induced to slow aging and increase healthspan, remain unknown. The authors demonstrate that the activity of a spatially defined neuronal population in the preoptic area is sufficient to induce a torpor-like state in mice. **Abstract**

Simultaneous CRISPR Screening and Spatial Transcriptomics Reveal Intracellular, Intercellular, and Functional Transcriptional Circuits

First Author: Loic Binan | Senior Authors: Brian Cleary and Samouil Farhi *(pictured)*
Cell | Massachusetts General Hospital, Harvard Medical School, Boston University, and the Broad Institute

Pooled optical screens have enabled the study of cellular interactions, morphology, or dynamics at massive scale, but they have not yet leveraged the power of highly plexed single-cell resolved transcriptomic readouts to inform molecular pathways. The authors present a combination of imaging spatial transcriptomics with parallel optical detection of *in situ* amplified guide RNAs (Perturb-FISH). **Abstract | Press Release**

View All Publications

Awards

Three Dana-Farber Cancer Institute Scientific Leaders Elected as Fellows of the American Association for Cancer Research Academy Class of 2025

Dana-Farber Cancer Institute

Drs. Bradley Bernstein *(pictured)*, A. Thomas Look, and William Sellers of Dana-Farber Cancer Institute have been elected as Fellows of the American Association for Cancer Research (AACR) Academy Class of 2025. The mission of the Fellows of the AACR Academy is to recognize and honor extraordinary scientists whose groundbreaking contributions have driven significant innovation and progress in the fight against cancer. **Read More**

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Local News

Are We on the Cusp of a Major Bird Flu Outbreak?

Harvard Medical School

Bird flu, or H5N1 avian influenza, has been circulating across North America since 2022, infecting birds, livestock, wildlife, pets, and humans. Despite 70 documented human cases, there are no known instances of human-to-human transmission — but some scientists are starting to worry that it's only a matter of time. Experts from the Massachusetts Consortium on Pathogen Readiness answered questions on March 5 about how H5N1 is spreading and evolving. **Read More**

Tuberculosis Relies on Protective Genes During Airborne Transmission

MIT News

When the bacteria that cause tuberculosis are coughed into the air, they are thrust into a comparatively hostile environment. How these bacteria survive their airborne journey is key to their persistence, but very little is known about how they protect themselves. Now MIT researchers have discovered a family of genes that becomes essential for survival specifically when the pathogen is exposed to the air, likely protecting the bacterium during its flight. **Read More**

New Patient-Partnered Research Project for Translocation Renal Cell Carcinoma Launches

Dana-Farber Cancer Institute

Count Me In, a patient-partnered research initiative led by Dr. Srinivas Viswanathan *(pictured)*, is launching a new project focused on translocation renal cell carcinoma (tRCC), a rare and aggressive form of kidney cancer. The effort will engage with tRCC patients, empowering them to share their unique health data with scientists to accelerate research on tRCC. **Read More**

Avoid or Ignore? How the Brain Copes with a Potential Threat

Harvard University Department of Molecular and Cellular Biology

When faced with an unfamiliar threat, animals must make split-second decisions: should they flee to avoid potential harm or push forward in pursuit of a reward? This fundamental question is at the heart of a new study from the lab of Dr. Naoshige Uchida *(pictured, far left)* that uncovers how the mouse brain dynamically regulates avoidance behaviors by balancing competing neural signals. **Read More**

A Better Treatment for Endometriosis Could Lie in Migraine Medications

Boston Children's Hospital

Recent research led by Boston Children's Hospital researchers Drs. Michael Rogers and Victor Fattori uncovers some surprising new endometriosis biology involving crosstalk between the nervous system and the immune system. It also points to a new, non-hormonal class of drugs that the FDA has already approved to treat migraine. **Read More**

Ragon Institute Launches Scientific Editing Platform

The Ragon Institute

The Ragon Institute is pleased to announce the launch of an internal Scientific Editing Platform. Created with the support of the Scientific Director Dr. Facundo Batista *(pictured)*, the platform aims to assist the research community in developing impactful and compelling grant applications. The services are currently available to the Ragon community at no cost. **Read More**

UMass Chan, University of Queensland Researchers Discover Genomic Immunity to Koala Retrovirus

UMass Chan Medical School

New research on how a retrovirus is spreading across populations of wild koalas in Queensland, Australia, is leading to a better understanding of the evolution of the animal's genome. The study explains how the animals adapted genomic immunity to the koala retrovirus (KoRV-A) by shutting it down, or silencing it, as it becomes a component of the genome. **Read More**

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Upcoming Events in Boston

March 30
8:00 AM
The New England Science Symposium (NESS)
Harvard Medical School

April 8
2:00 PM
Bio-IT World Conference & Expo
Whitehead Institute for Biomedical Research

May 4
8:00 AM
2025 AAPS National Biotechnology Conference
The Westin Boston Seaport District

May 12
8:00 AM
PEGS Protein & Antibody Engineering Summit
Omni Hotel Boston at the Seaport

May 28
8:00 AM
3rd Gene Therapy Potency Assay Summit
Revere Hotel Boston Common

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Science Jobs in Boston

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Mass General Brigham

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Dana-Farber Cancer Institute

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Takeda

Temporary Research Associate, CORE Lab
Northeastern University

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