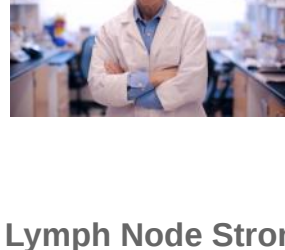


Publications of the Week

## Nanoparticle-Mediated Delivery of Anti-PU.1 siRNA via Localized Intracisternal Administration Reduces Neuroinflammation

First Author: William Ralvenius | Senior Authors: Li-Huei Tsai, Owen Fenton, and Robert Langer *(pictured)*  
Advanced Materials | The Picower Institute, The Koch Institute, The Broad Institute, and MIT

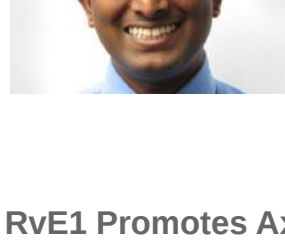


Microglia express many of the Alzheimer's disease-risk loci identified in genome wide association studies and present a promising target for anti-inflammatory RNA therapeutics. Here, several lipid nanoparticle formulations are examined. A lead candidate that supports efficient RNA delivery in cultures of human stem cell-derived microglia-like cells and animal models of neuroinflammation is identified.

[Abstract](#) | [Press Release](#)

## Lymph Node Stromal Cell Responses to Perinatal T Cell Waves, a Temporal Atlas

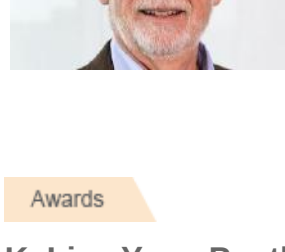
First Author: Teshika Jayewickreme *(pictured)* | Senior Author: Diane Mathis  
Proceedings of the National Academy of Sciences | Harvard Medical School



Regulatory T cells (Tregs) made during the first two weeks of life are key drivers of perinatal tolerance induction, but how these cells are generated and operate has not been established. To elucidate the unique environment murine perinatal Tregs encounter within the lymph nodes (LNs) as they first emerge from the thymus, and how it evolves over the succeeding days, researchers employed single-cell RNA sequencing to generate an atlas of the early LN niche. [Abstract](#)

## RvE1 Promotes Axin2+ Cell Regeneration and Reduces Bacterial Invasion

First Author: Yu-Chiao Wu | Senior Author: Thomas Van Dyke *(pictured)*  
Journal of Dental Research | The Forsyth Institute and Harvard School of Dental Medicine



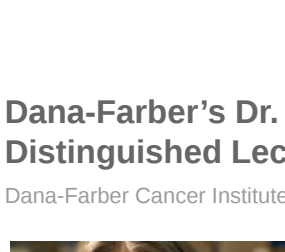
Vital pulp therapy and root canal therapy are the dominant treatment for irreversible pulpitis. While the success rate of these procedures is favorable, they have some limitations. The purpose of this study was to explore further the cellular target of Resolvin E1 (RvE1) therapy in dental pulp regeneration and the impact of RvE1 in infected pulps. [Abstract](#) | [Press Release](#)

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Awards

## K. Lisa Yang Postbaccalaureate Program Names New Scholars

McGovern Institute



Funded by philanthropist Lisa Yang, the K. Lisa Yang Postbaccalaureate Scholar Program provides two years of paid laboratory experience, mentorship, and education to recent college graduates from backgrounds underrepresented in neuroscience. This year, two young researchers in McGovern Institute labs, Joseph Iltiat and Sam Mellow *(pictured)*, are the recipients of the Yang Program.

[Read More](#)

## Dana-Farber's Dr. Kornelia Polyak Recognized with the 2023 AACR Distinguished Lectureship in Breast Cancer Research

Dana-Farber Cancer Institute



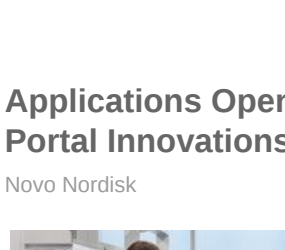
Dana-Farber's Dr. Kornelia Polyak *(pictured)* is the recipient of the 2023 American Association of Cancer Research (AACR) Distinguished Lectureship in Breast Cancer Research. This award was established to recognize outstanding science that has inspired, or has the potential to inspire, new perspectives on the etiology, diagnosis, treatment, or prevention of breast cancer. [Read More](#)

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Local News

## Immunotherapy plus Standard Therapy Can Increase Progression-Free Survival in Patients with HER2+ Metastatic Breast Cancer, Trial Suggests

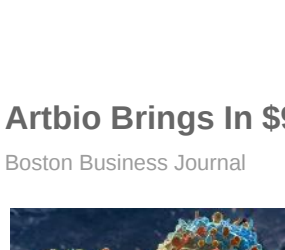
Dana-Farber Cancer Institute



Adding an immunotherapy agent to the standard therapy for HER2+ metastatic breast cancer can significantly extend the time in which the disease is held in check, according to new research led by Dr. Adrienne Waks *(pictured)* a breast oncologist at Dana-Farber Cancer Institute. The phase II trial has been dubbed AVIATOR and was presented by Dr. Waks at the San Antonio Breast Cancer Symposium. [Read More](#)

## Applications Open for the 2024 Pathbreakers Program by Novo Nordisk and Portal Innovations

Novo Nordisk



Novo Nordisk's Bio Innovation Hub in Boston/Cambridge, in collaboration with Portal Innovations, launched the 2024 Pathbreakers Program, offering partnering and investment opportunities for US-based biotech startups. Biotechs that have not previously worked within cardiometabolic diseases but are interested in exploring new indications for their technology or platform are encouraged to apply.

[Read More](#)

## Artbio Brings In \$90M for Radioactive Molecules That Target Cancer

Boston Business Journal



A four-year-old Boston startup is getting \$90 million to help develop a new type of cancer drug. The startup, Artbio, is led by a former top executive at Novartis Oncology, Dr. Emanuele Ostuni. They are putting the fresh funds towards a new type of cancer drug which is based around radioactive molecules that target cancer tumors. This effort was co-led by an undisclosed healthcare fund. [Read More](#)

## The Lucky Break Behind the First CRISPR Treatment

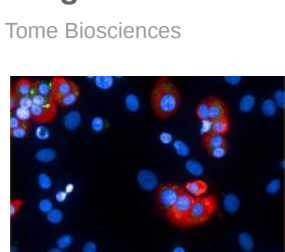
MIT Technology Review



The world's first commercial gene-editing treatment is set to start changing the lives of people with sickle-cell disease. It's called Casgevy, and it was approved last month in the UK. The treatment, which will be sold in the US by Vertex Pharmaceuticals, employs CRISPR and involves an edit that turns on fetal hemoglobin. [Read More](#)

## How a Mutation in Microglia Elevates Alzheimer's Risk

MIT News



A rare but potent genetic mutation that alters a protein in the brain's immune cells, known as microglia, can give people as much as a threefold greater risk of developing Alzheimer's disease. A new study led by Dr. Li-Huei Tsai *(pictured)* in The Picower Institute for Learning and Memory at MIT details how the mutation undermines microglia function, explaining how it seems to generate that higher risk. [Read More](#)

## Tome Biosciences Launches with over \$200 Million in Funding to Advance Programmable Genomic Integration Platform

Tome Biosciences



Tome Biosciences, the programmable genomic integration company, has launched to usher in a new era of genomic medicines based on programmable genomic integration (PGI). PGI enables the insertion of any DNA sequence, of any size, into any programmed genomic location. The company has raised \$213 million in Series A and B funding from investors. [Read More](#)

## Building Models of the Brain to Take Them Apart

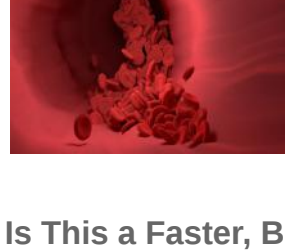
Harvard Medical School



Dr. Kanaka Rajan *(pictured)* describes herself as an ever-curious, "stick-my-finger-in-the-electrical-socket kind of person" who enjoys working with her hands. Forays into engineering and experimental neuroscience led Dr. Rajan to her true calling: computational neuroscience. Dr. Rajan spends her time building and manipulating models of the brain — an approach that affords her a great deal of freedom. [Read More](#)

## Demystifying a Mammal's Brain, Cell by Cell

The Harvard Gazette



A group of scientists, including several at Harvard, have dived deeper into the mammalian brain than ever before by categorizing and mapping at the molecular level all of its thousands of different cell types. The researchers reported their work in *Nature*, through a series of ten papers — six with Harvard affiliations. It's part of the National Institutes of Health's Brain Research Through Advancing Innovative Neurotechnologies initiative. [Read More](#)

## Bluebird Bio Receives US FDA Nod for Sickle Cell Therapy

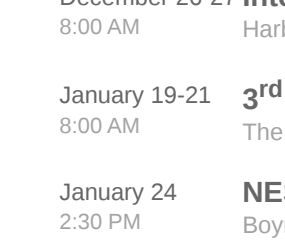
BioProcess International



The US Food and Drug Administration (FDA) has approved bluebird's Lyfgenia (lovotibeglogene autotemcel) for the treatment of sickle cell disease. Approved for patients aged 12 or older with a history of vaso-occlusive events (VOEs), Lyfgenia is a one-time gene therapy with the potential to resolve VOEs. The firm plans to make the therapy available by early 2024. [Read More](#)

## Is This a Faster, Better Treatment for Blood and Solid Tumor Cancers?

Northeastern Global News



Northeastern researcher Dr. Stephen Hatfield *(pictured)* says his lab has employed a novel gene editing technology that might make personalized treatments for cancer available "off the shelf" against solid tumors. The platform is called base editing and he says it allows multiple gene edits of cancer-fighting immune cells called CAR T cells without causing substantial DNA damage. [Read More](#)

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## Upcoming Events in Boston

- December 20 4:30 PM **Snowman Silly Science**  
Sharon Public Library
- December 26-27 8:00 AM **International Conference on Science, Engineering & Technology**  
Harborside Inn
- January 19-21 8:00 AM **3<sup>rd</sup> Cell Therapy Potency Assay Summit**  
The Colonnade Hotel
- January 24 2:30 PM **NESBA BIO-SAXS Symposia**  
Boynton Yards
- January 30-February 1 8:30 AM **7<sup>th</sup> DDR Inhibitors Summit**  
The Colonnade Hotel

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## Science Jobs in Boston

- Scientist, Cellular Pharmacology and Modeling**  
Takeda
- Scientist, DNA Storage**  
CATALOG
- Biomaterials Research Associate I**  
Tender Food
- Research Technician**  
Dana-Farber Cancer Institute
- Research Scientist I, Cancer Program, Meyerson Lab**  
The Broad Institute of MIT & Harvard

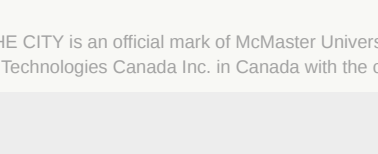
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