



Publications of the Week

A Systematic Review and Meta-Analysis of Nonrelapse Mortality After CAR T Cell Therapy

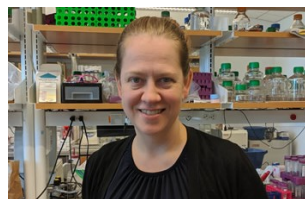
First Authors: David Cordas dos Santos (*pictured*) and Tobias Tix | Senior Author: Kai Rejeski
Nature Medicine | Dana-Farber Cancer Institute, Broad Institute, and Brigham and Women's Hospital



Although chimeric antigen receptor (CAR) T cell therapy represents a transformative immunotherapy, it is also associated with distinct toxicities that contribute to morbidity and mortality. In this systematic review and meta-analysis, researchers searched MEDLINE, Embase, and CINAHL for reports of nonrelapse mortality after CAR T cell therapy in lymphoma and multiple myeloma. [Abstract](#)

Structural Mechanism of Angiogenin Activation by the Ribosome

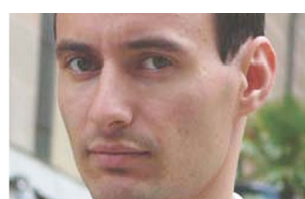
First Author: Anna Loveland (*pictured*) | Senior Author: Andrei Korostelev
Nature | UMass Chan Medical School



Angiogenin, an RNase-A-family protein, promotes angiogenesis and has been implicated in cancer, neurodegenerative diseases, and epigenetic inheritance. Here, researchers identify the mechanisms behind the catalytic activity of isolated angiogenin using biochemical assays and cryogenic electron microscopy. This study reveals that the cytosolic ribosome is the activator of angiogenin. [Abstract](#) | [Press Release](#)

Genetic Drivers and Cellular Selection of Female Mosaic X Chromosome Loss

First Authors: Aoxing Liu, Giulio Genovese (*pictured*), and Yajie Zhao | Senior Authors: Po-Ru Loh, Andrea Ganna, John Perry, and Mitchell Machiela
Nature | Massachusetts General Hospital, Broad Institute, Harvard Medical School, Dana-Farber Cancer Institute, and Brigham and Women's Hospital



Mosaic loss of the X chromosome (mLOX) is the most common clonal somatic alteration in leukocytes of female individuals, but little is known about its genetic determinants or phenotypic consequences. To address this, researchers used data from 883,574 female participants across eight biobanks; 12% of participants exhibited detectable mLOX in approximately 2% of leukocytes. [Abstract](#) | [Press Release](#)

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Awards

Fellowship Enables Study of How the Brain Makes Memories of Places

The Picower Institute



Assistant Professor Dr. Linlin Fan (*pictured*) has won a new fellowship award from the Klingenstein Philanthropies and the Simons Foundation. This fellowship will launch Dr. Fan's research to advance understanding of how the brain employs plasticity to learn places. The overall goal is to understand how inhibitory synaptic plasticity manifests in behaving mammals during learning and memory. [Read More](#)

Award Will Enable Detailed Study of an Organism That Constantly Adds New Neurons

The Picower Institute



Assistant Professor Dr. Brady Weissbourd (*pictured*) has been named a Searle Scholar. Dr. Weissbourd will use the support of the scholarship, which will provide \$100,000 a year for the next three years, to study how jellyfish excel at building and regenerating their neural networks. This work has future implications for regenerative medicine. [Read More](#)

Dan and Diane Riccio Fund for Neuroscience Announces Two Research Awards at UMass Chan

UMass Chan Medical School



Two teams of UMass Chan Medical School scientists received awards of \$50,000 each to support ground-breaking and interdisciplinary research in the neurosciences. One award was presented to Drs. Darren Lee, Claudio Punzo, and Ann Marshak-Rothstein (*pictured*) for their project, "Fas therapy for the treatment of autoimmune uveitis." [Read More](#)

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Local News

Implantable Microphone Could Lead to Fully Internal Cochlear Implants

MIT News



On the way to creating a fully internal cochlear implant, a multidisciplinary team of researchers at MIT, Massachusetts Eye and Ear, and Harvard Medical School has produced an implantable microphone that performs as well as commercial external hearing aid microphones. The microphone remains one of the largest roadblocks to adopting a fully internalized cochlear implant. [Read More](#)

Making Genome Sequencing a First-Line Test in Rare Disease

Boston Children's Hospital



Costs of genome sequencing are coming down enough to bring it within clinical reach. But until now, its added diagnostic yield hadn't been spelled out. A study in *The New England Journal of Medicine* makes a strong case for jumping straight to genome sequencing to diagnose children with rare diseases. Study leaders Drs. Monica Wojcik and Anne O'Donnell-Luria hope their findings will change previous practices towards sequencing. [Read More](#)

"DrugMap" Expected to Accelerate Cancer Drug Discovery

Massachusetts General Hospital



Approximately 400 cancer drivers have been discovered, but fewer than 10% are targeted by the newer precision therapies. Many precision anti-cancer drugs target cysteine, an amino acid in proteins that has special reactivity. In an exciting advance, Drs. Liron Bar-Peled (*pictured*) and Michael Lawrence have developed DrugMap, a quantitative atlas of cysteine ligandability—that is, protein druggability—across numerous cancer types. [Read More](#)

Prime Editing Efficiently Corrects Cystic Fibrosis Mutation in Human Lung Cells

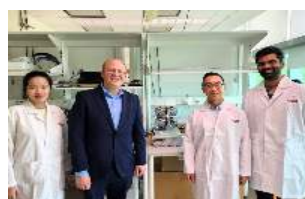
Broad Institute



Researchers at the Broad Institute of MIT and Harvard led by Dr. David Liu (*pictured*) have developed a gene-editing approach that efficiently corrects the most common mutation that causes cystic fibrosis, found in 85% of patients. With further development, it could pave the way for treatments that are administered only once and have fewer side effects. [Read More](#)

A New Way to Miniaturize Cell Production for Cancer Treatment

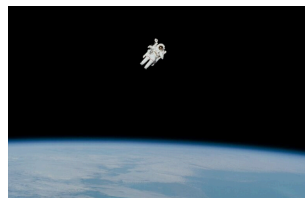
MIT News



Researchers from the Singapore-MIT Alliance for Research and Technology (SMART) have developed a novel way to produce clinical doses of viable autologous chimeric antigen receptor T-cells in an ultra-small automated closed-system microfluidic chip, roughly the size of a pack of cards. Drs. Denise Teo, Michael Birnbaum, Wei-Xiang Sin, and Narendra Suhas Jagannathan (*pictured, left to right*) are a part of the SMART team. [Read More](#)

MIT Engineers Find a Way to Protect Microbes from Extreme Conditions

MIT News



Microbes that are used for health, agricultural, or other applications need to be able to withstand extreme conditions, and ideally the manufacturing processes used to make tablets for long-term storage. MIT researchers have now developed a new way to make microbes hardy enough to withstand these extreme conditions. This research is backed with funding from NASA's Translational Research Institute for Space Health. [Read More](#)

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Upcoming Events in Boston

- July 29 8:00 AM **Psychedelics Bootcamp 2024: Key Topics in Law, Medicine, Research, Regulations, and Advocacy**
Harvard Medical School
- July 31 12:00 PM **Plotting like a Pro: Data Visualization with ggplot2**
Online
- August 1 2:00 PM **Biotech in Boston: Leading the Way in Life Sciences**
The Ritz-Carlton
- August 19 - 22 8:00 AM **The Bioprocessing Summit 2024**
Sheraton Hotel
- September 18 8:30 AM **The 2025 Aging Brain Initiative Symposium: The Neuro-Immune Axis and the Aging Brain**
Singleton Auditorium

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Science Jobs in Boston

- Executive Director Translational Science Lead, Immunology Cell Therapy**
AstraZeneca
- Principal Scientist, LNP Development**
Beam Therapeutics
- Research Technologist**
Martinos Center for Biomedical Imaging
- Postdoctoral Fellow**
Broad Institute
- Cell-Based Assays Senior or Principal Scientist, Analytical Development**
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