

Publications of the Week
Genotype-Fitness Maps of EGFR-Mutant Lung Adenocarcinoma Chart the Evolutionary Landscape of Resistance for Combination Therapy Optimization

 First Author: Patrick Bolan | Senior Author: Dan Landau *(pictured)*
 Cell Systems | Broad Institute


Cancer evolution poses a central obstacle to cure, as resistant clones expand under therapeutic selection pressures. Genome sequencing of relapsed disease can nominate genomic alterations conferring resistance but sample collection lags behind, limiting therapeutic innovation. Using serial sampling, dose gradients, and mathematical modeling, the authors generated genotype-fitness maps across therapeutic contexts and identified alterations that escape therapy. [Abstract](#)

A Rapid Triage Test for Active Pulmonary Tuberculosis in Adult Patients with Persistent Cough

 First Author: Rushdy Ahmad | Senior Author: Michael Gillette *(pictured)*
 Science Translational Medicine | Broad Institute and Massachusetts General Hospital


Tuberculosis remains a global health burden. The authors used machine learning to develop an algorithm that distinguished active tuberculosis from other diseases with similar symptoms by measuring the expression of four proteins in blood samples. The authors validated their triage test's discriminatory power by using blood samples from subjects with persistent cough across several continents. [Abstract](#)

Fibroblastic Reticular Cells Enhance T Cell Metabolism and Survival via Epigenetic Remodeling

 First Author: Flavian Brown | Senior Author: Shannon Turley *(pictured)*
 Nature Immunology | Dana-Farber Cancer Institute, Harvard Medical School and Neon Therapeutics


Lymph node fibroblastic reticular cells (FRCs) respond to signals from activated T cells by releasing nitric oxide, which inhibits T cell proliferation and restricts the size of the expanding T cell pool. Whether interactions with FRCs also support the function or differentiation of activated CD8⁺ T cells is not known. The authors report that encounters with FRCs enhanced cytokine production and remodelled chromatin accessibility in newly activated CD8⁺ T cells via interleukin-6. [Abstract](#)

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Awards
Laura DiRoberts Receives Inaugural Denton Award

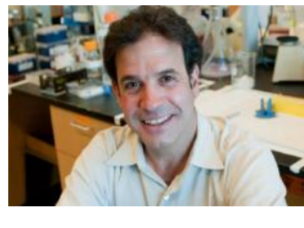
Boston University Biology



Laura DiRoberts *(pictured)* of the Rotjan Lab at Boston University has been selected as the inaugural winner of the Denton Award for her master's research thesis in biology titled "Nitrogen Cycling in the Temperate Northern Star Coral, *Astrangia poculata*: Distinguishing Autotrophic from Heterotrophic Nutrient Contributions." This award is given for excellence in scholarship and research accomplishment during a master's thesis in the Department of Biology. [Read More](#)

Brain Research Foundation Honors Dr. Frederic A. Gibbs Discovery Award Recipients

P&T Community



The Gibbs Discovery Award for Scientific Achievement has been given to Dr. Rudolph Tanzi *(pictured)*, the Joseph P. and Rose F. Kennedy Professor of Neurology at Harvard Medical School. Dr. Tanzi has spent his entire career focused on research related to identifying the genetic cause of Alzheimer's disease. His doctoral thesis was on the discovery and isolation of the first Alzheimer's gene – the amyloid precursor protein. [Read More](#)

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Local News
Disc Medicine Closes \$50 Million Series A and Inks Licensing Deal with AbbVie

BioSpace



Disc Medicine, headquartered in Cambridge, Massachusetts, has announced the completion of a \$50 million Series A financing. The round was led by Novo Holdings along with Access Biotechnology and founding investor Atlas Venture. The company also announced that it had inked an exclusive deal with AbbVie for a series of hemojuvelin antagonist monoclonal antibodies. [Read More](#)

Promising Results Reported in Tay-Sachs Gene Therapy Trial

Genetic Engineering and Biotechnology News



Researchers have obtained the first signs of clinical benefit in an early-stage gene therapy trial for Tay-Sachs disease, according to a presentation at the European Society of Gene & Cell Therapy annual conference. Dr. Terence R. Flotte *(pictured)*, Executive Deputy Chancellor, Provost, and Dean of the University of Massachusetts School of Medicine, presented the results in Barcelona. [Read More](#)

Skeleton Key: Researchers Reveal Structures of Skeletal Components in Hair-Like Cilia

Harvard Medical School



It's not every day that scientists get to publish a paper on Halloween about a skeleton, but that's what the laboratory of Dr. Alan Brown *(pictured)* in the Blavatnik Institute at Harvard Medical School and Rui Zhang at Washington University in St. Louis did. The collaborating teams mapped out the atomic structures of significant components of the cytoskeletons of cilia—hairlike appendages on cell surfaces that serve in critical roles as transporters and sensory signal antennae. [Read More](#)

Biogen and Alkermes Announce FDA Approval of VUMERITY™ (Diroximel Fumarate) for Multiple Sclerosis

BioSpace



Biogen and Alkermes have announced that the U.S. Food and Drug Administration has approved VUMERITY™ (diroximel fumarate), a novel oral fumarate with a distinct chemical structure, for the treatment of relapsing forms of multiple sclerosis, to include clinically isolated syndrome, relapsing-remitting disease and active secondary progressive disease. Biogen holds the exclusive, worldwide license to commercialize VUMERITY. [Read More](#)

Small Molecule Inhibitor Shows Clinical Activity in Lung and Colorectal Cancer Patients

Dana-Farber Cancer Institute



The investigational KRAS G12C inhibitor MRTX849 has yielded clinical responses in patients with non-small cell lung cancer and colorectal cancer harboring KRAS G12C mutations, according to data from a Phase I clinical trial presented by Dr. Pasi Jänne *(pictured)* at the AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics by Dana-Farber Cancer Institute researchers. [Read More](#)

First Patient Enrolled in Oxford BioDynamics' ALS Biomarker Study

MGH News



Oxford BioDynamics has announced that the first patient has been enrolled in the REFINE-ALS clinical study, designed to identify and measure specific biomarkers and clinical assessments in up to 300 people with amyotrophic lateral sclerosis (ALS) who are taking Radicava (edaravone). The study includes assessments of biomarkers for oxidative stress, inflammation, neuronal and muscle injury. [Read More](#)

First Evidence of Immune Response Targeting Brain Cells in Autism

BIDMC News



Autism spectrum disorders affect one in 59 American children by age eight. With no known quantitative biological features, autism diagnoses are currently based on expert assessments of behavioral symptoms. Dr. Matthew P. Anderson *(pictured)*, a Physician-Scientist at Beth Israel Deaconess Medical Center, and colleagues report the presence of cellular features consistent with an immune response targeting specialized brain cells in more than two thirds of autistic brains analyzed postmortem. [Read More](#)

New Synthesis Method Yields Degradable Polymers

MIT News



MIT chemists, led by Dr. Jeremiah Johnson *(pictured)*, have devised a way to synthesize polymers that can break down more readily in the body and in the environment. The MIT research team has come up with a way to make those polymers more degradable by adding a novel type of building block to the backbone of the polymer. This new building block, or monomer, forms chemical bonds that can be broken down by weak acids, bases, and ions such as fluoride. [Read More](#)

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Upcoming Events in Boston

- November 5 8:00 AM **Leadership Development for Physicians in Academic Health Centers**
Harvard T.H. Chan School of Public Health
- November 5 10:30 AM **Mansfield Bio-Incubator's Second Annual Open House**
Mansfield Bio-Incubator
- November 6 8:00 AM **Challenges in Rare Disease Clinical Trials Symposium & East Training**
Alexion Pharmaceuticals Inc.
- November 6 8:00 AM **Patient Advocacy Summit 2019**
Marriott Boston, Cambridge
- November 7 11:00 AM **Discover Brigham**
Brigham and Women's Hospital

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