

Publications of the Week
A Regulatory T Cell Notch4–GDF15 Axis Licenses Tissue Inflammation in Asthma

 First Author: Hani Harb | Senior Author: Talal Chatila (pictured)
 Nature Immunology | Boston Children's Hospital and Harvard Medical School

 Elucidating the mechanisms that sustain asthmatic inflammation is critical for precision therapies. The authors found that interleukin-6- and STAT3 transcription factor-dependent upregulation of Notch4 receptor on lung tissue regulatory T cells is necessary for allergens and particulate matter pollutants to promote airway inflammation. [Profile](#) | [Abstract](#)
Antibiotic Susceptibility Signatures Identify Potential Antimicrobial Targets in the *Acinetobacter baumannii* Cell Envelope

 First Author: Edward Geisinger (pictured) | Senior Author: Ralph Isberg
 Nature Communications | Northeastern University, Tufts University School of Medicine and Boston College

 A unique, protective cell envelope contributes to the broad drug resistance of the nosocomial pathogen *Acinetobacter baumannii*. The authors used transposon insertion sequencing to identify *A. baumannii* mutants displaying altered susceptibility to a panel of diverse antibiotics. By examining mutants with antibiotic susceptibility profiles that parallel mutations in characterized genes, they inferred the function of multiple uncharacterized envelope proteins, some of which have roles in cell division or cell elongation. [Abstract](#)
[View All Publications](#)
Awards
Picower Researcher Earns Brain & Behavior Research Foundation Young Investigator Grant

Picower Institute


 Dr. Vincent Breton-Provencher (pictured), a postdoc in the lab of Picower Institute Investigator Dr. Miryanka Sur, is among a select group of promising researchers to be awarded Young Investigator grants, as announced by the Brain & Behavior Research Foundation. Breton-Provencher is working to understand the neurobiology of attention to better diagnose ADHD and disruptive behavior, and to develop potential treatments. [Read More](#)
[View All Awards](#)
Local News
These Genes Help Explain How Malaria Parasites Survive Treatment with Common Drug

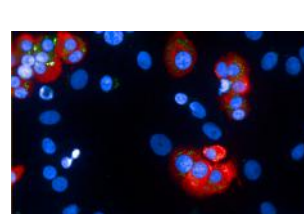
Whitehead Institute


 The essential malaria drug artemisinin acts like a "ticking time bomb" in parasite cells — but in the half a century since the drug was introduced, malaria-causing parasites have slowly grown less and less susceptible to the treatment, threatening attempts at global control over the disease. Researchers at the Whitehead Institute have used genome screening techniques in the related parasite *Toxoplasma gondii* to identify genes that affect the parasites' susceptibility to artemisinin. [Read More](#)
Johnson & Johnson's Coronavirus Vaccine Enters Phase 3 Trial with Beth Israel

CBS Boston


 Johnson & Johnson's COVID-19 vaccine candidate has begun Phase 3 trials in the United States, including at Beth Israel Deaconess Medical Center. Trials for the single-dose vaccine will include up to 60,000 adult participants at nearly 215 sites in the US and internationally. Johnson & Johnson is the fourth company to begin large-scale clinical trials for a COVID-19 vaccine in the United States. [Read More](#)
Type 1 Diabetes from a Beta Cell's Perspective

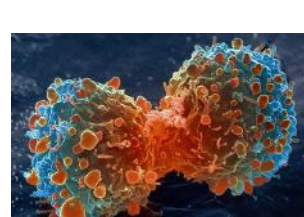
Whitehead Institute


 Researchers in the lab of Whitehead Institute founding member Dr. Rudolf Jaenisch have demonstrated a new experimental system for more precisely studying the mechanisms of type 1 diabetes, focusing on how a person's beta cells respond to an attack from their own immune system. In doing so, they revealed features of the disease that could be targets for future therapeutics. [Read More](#)
Highly Detailed Map of the Human Heart Could Guide Personalized Treatments

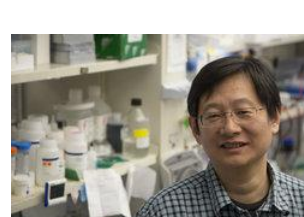
Harvard Medical School


 An international team co-led by investigators at Harvard Medical School and Brigham and Women's Hospital have created a detailed cellular and molecular map of the healthy human heart to understand how this vital organ functions and to shed light on what goes awry in cardiovascular disease. The team analyzed almost a half million individual cells to build the most extensive draft cell atlas to date of the human heart. [Read More](#)
Spurring Natural Killer Cells to Fight Head and Neck Cancer

Dana-Farber


 Excited to be the first patient in a novel clinical trial, Jon Woods is hoping that an infusion of immune natural killer cells donated by his son will beat back the metastatic cancer he has battled for four years. Dana-Farber physician-scientists say the trial is an unprecedented test of whether therapy with natural killer cells can improve outcomes in advanced head and neck cancer. [Read More](#)
Study Sheds Light on Some Tumors' Ability to Evade a Promising Immunotherapy Strategy

Beth Israel Deaconess Medical Center


 In the last decade, cancer immunotherapies have demonstrated improved clinical outcomes in patients with a variety of cancers. However, only a small subset of patients respond to the treatment, known as PD-1/PD-L1 blockade. A new paper from Dr. Wenyi Wei (pictured) at Beth Israel Deaconess Medical Center sheds light on the mechanisms underlying tumors' ability to evade PD-1-mediated immune surveillance. [Read More](#)
Development of an Imaging Probe to Visualize Alzheimer's Disease-Related Gamma-Secretase in the Brain

Massachusetts General Hospital


 Scientists at the Massachusetts General Hospital have developed a molecular imaging probe to reveal Alzheimer's disease (AD)-related γ -secretase in rodents and macaques with translational potentials in humans. γ -Secretase is a key player in the etiology of AD and a prime drug target for AD, whose brain regional expression and distribution have yet remain largely unknown. [Read More](#)
CRISPR-Based Malaria Testing On-the-Fly

Wyss Institute


 A multi-disciplinary research collaboration led by Wyss Core Faculty member Dr. James Collins at the Wyss Institute and MIT, and assembled by clinical fellow Dr. Rose Lee, has created a field-applicable, ultrasensitive diagnostic assay that specifically detects DNA sequences from all *Plasmodium* species in symptomatic and asymptomatic malaria. [Read More](#)
Jeannie and Jonathan Lavine Establish the Lavine Family Fund for Preventative Cancer Therapies

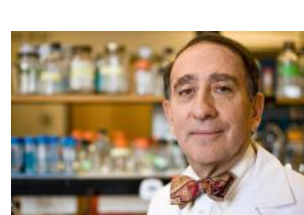
Dana-Farber


 Developing the best possible cancer therapies is the driving force of Dana-Farber Cancer Institute, but the work of Dana-Farber doesn't stop there. Identifying high-risk patients and using preventative cancer therapies is an essential component of the fight against cancer and the newly established Lavine Family Fund for Preventative Cancer Therapies will help fund the research needed to diagnose and treat cancer before it starts. [Read More](#)
Breakthrough for Tomorrow's Dentistry

Karolinska Institutet


 Using a single-cell RNA sequencing method and genetic tracing, a team involving researchers at Harvard University has identified and characterized all cell populations in mouse teeth and in the young growing and adult human teeth. The researchers believe that the findings should prove a useful resource not only for dental biologists but also for researchers interested in development and regenerative biology in general. [Read More](#)
Center for Antimicrobial Resistance Renamed for Stuart B. Levy

Tufts Now


 The Center for Integrated Management of Antimicrobial Resistance, a collaborative effort supported by Tufts University and Tufts Medical Center, has been renamed the Stuart B. Levy Center for Integrated Management of Antimicrobial Resistance (Levy CIMAR) at Tufts. Levy (pictured), a Professor Emeritus of Molecular Biology and Microbiology at Tufts University School of Medicine, passed away in September 2019. He retired in 2018 after 47 years at Tufts. [Read More](#)
Biomarker Indicating Neurodegeneration Identified in the Eye

Boston Medical Center via Science Daily


 A new study led by Boston Medical Center researchers indicates a well-known biomarker that serves as a marker for earlier diagnosis of neurodegenerative diseases is now detectable in the eye. Neurofilament light chain, a protein previously detected in cerebrospinal fluid and blood that is being explored as a biomarker to detect neurodegeneration, has now been identified in the vitreous humor, or fluid within the eye. [Read More](#)
MassBiologics Announces Partnership with PTC Therapeutics to Manufacture Gene Therapy for Rare Pediatric Condition

UMass Med News


 MassBiologics of UMass Medical School has entered into an agreement with PTC Therapeutics to manufacture biological investigational new drugs and commercial pharmaceutical products for use in humans. MassBiologics will manufacture PTC Therapeutics' novel investigational therapy for Aromatic L-amino acid decarboxylase (AADC) deficiency, a rare genetic condition caused by a mutation in the dopa decarboxylase gene, resulting in a lack of functioning AADC enzyme. [Read More](#)
Broad Institute and Bayer Expand Cardiovascular Alliance

Broad Institute


 The Broad Institute and Bayer have announced a five year expansion of their cardiovascular alliance. The Cardiometabolic Risk partnership leverages insights from human genetics to help create new cardiovascular therapies. First launched in 2015, the program began as a recognition that while a majority of cardiovascular disease can be associated with lifestyle factors, genomics can influence an individual's predisposition to cardiovascular disease, age of onset, and severity. [Read More](#)
[View All Articles](#) | [Submit an Article](#)
Upcoming Events in Boston

- September 30 10:00 AM **Foundations of Team Science Workshop** Online
- September 30 1:00 PM **Making the Most of Your Postdoc** Online
- September 30 3:00 PM **How to Identify Funding Opportunities** Online
- October 5-6 11:00 AM **Harvard Biotechnology Club Career Fair** Online
- October 6 10:00 AM **MIT Fall Career Fair Series – Healthcare, Pharmaceuticals, and Sciences** Online

[View All Events](#) | [Submit an Event](#)
Science Jobs in Boston
Tenure Track Faculty Position, Fundamental Biology

Whitehead Institute

Scientist, Gene Editing

Verve Therapeutics

Research Assistant III, Epithelial Microbiome Modeling

Wyss Institute

Innovation Project Manager, Clinical Sciences & Innovation

Novartis

Scientist, Protein Detection Reagents

Moderna

[View 67 Other Science Jobs](#) | [Submit a Job](#)

Free Wallchart: SARS-CoV-2 Structure and Life Cycle
[REQUEST A COPY](#)

 Submit your articles and events by reaching out to us at info@scienceinboston.com.

BROUGHT TO YOU BY


STEMCELL Technologies
 Products | Services

STEMCELL Science News
 Free Weekly Updates on Your Field

The Stem Cell Podcast
 Interviews and Updates on Stem Cell Science