SCIENCE in BOSTON

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Publications of the Week

Age-Associated Contraction of Tumor-Specific T Cells Impairs Antitumor Immunity

First Authors: Peter Georgiev and SeongJun Han | Senior Authors: Arlene Sharpe, Marcia Haigis, and Alison Ringel *(pictured)*
Cancer Immunology Research | Harvard University, Dana-Farber Cancer Institute, and the Ragon Institute

Progressive decline of the adaptive immune system with increasing age coincides with a sharp increase in cancer incidence. In this study, researchers set out to understand whether deficits in antitumor immunity with advanced age promote tumor progression and/or drive resistance to immunotherapy. They found that multiple syngeneic cancers grew more rapidly in aged versus young adult mice, driven by dysfunctional $CD8^+$ T-cell responses. **Abstract | Press Release**

Virally Delivered CMYA5 Enhances the Assembly of Cardiac Dyads

First Author: Fujian Lu | Senior Author: William Pu *(pictured)*
Nature Biomedical Engineering | Boston Children's Hospital, Harvard University, Harvard Stem Cell Institute, and Boston University

Cardiomyocytes derived from human induced pluripotent stem cells (hiPSC-CMs) lack nanoscale structures essential for efficient excitation–contraction coupling. Such nanostructures, known as dyads, are frequently disrupted in heart failure. Here researchers show that the reduced expression of cardiomyopathy-associated 5 (CMYA5) contributes to dyad disorganization in heart failure and to impaired dyad assembly in hiPSC-CMs. **Abstract | Press Release**

View All Publications

Awards

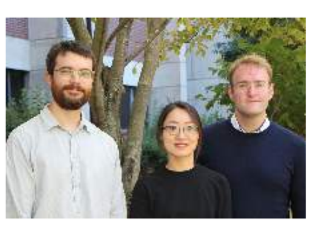
NIDCR Awards ADA Forsyth over $6 Million to Design AI-Driven Amalgam Replacement for Dental Restoratives

ADA Forsyth Institute

The ADA Forsyth Institute has been awarded a $6.2 million grant from the National Institute of Dental and Craniofacial Research (NIDCR). This five-year award will support a groundbreaking project led by Dr. Jirun Sun *(pictured)* to develop next-generation smart materials for dental fillings using physics-based artificial intelligence. **Read More**

Postdocs Awarded Funding from the NIH and Branco Weiss

Harvard University Department of Molecular and Cellular Biology (MCB)



This semester, three postdocs from MCB labs have recently been awarded fellowships. Dr. Bongmin Bae *(pictured, center)* of the Whipple Lab earned an F32 award from the National Institutes of Health (NIH). Dr. Malcolm Campbell *(left)* of the Uchida Lab received a K99/R00 Pathway to Independence Award from the National Institute on Drug Abuse. Dr. Fabian Voigt *(right)* of the Engert Lab was selected for a Branco Weiss Fellowship. **Read More**

Drs. Victor Ambros and Gary Ruvkun Share Nobel Prize in Physiology or Medicine

MIT News

Drs. Victor Ambros *(pictured, left)* and Gary Ruvkun *(right)* will share the 2024 Nobel Prize in Physiology or Medicine. Dr. Ambros, a Professor at the University of Massachusetts Chan Medical School, and Dr. Ruvkun, a Professor at Harvard Medical School and Massachusetts General Hospital, were honored for their discovery of microRNA, a class of tiny RNA molecules that play a critical role in gene control. **Read More**

BU Biomedical Engineer Wins a 2024 National Institutes of Health Director's Transformative Research Award

The Brink

Boston University Engineer Dr. Alexander Green *(pictured)* wants take force measurement for biological cells, with the goal of one day improving cancer therapies. To help accomplish this, Dr. Green has been named a 2024 National Institutes of Health Director's Transformative Research Award winner. Dr. Green is sharing the award's $7.2 million funding with two researchers from Yale University. **Read More**

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Local News

Through the Magnifying Glass: The Perfusion Lab

Bench Press

Massachusetts General Hospital's series #ThroughTheMagnifyingGlass allows people to learn more about the individual labs and centers that make up the Mass General Research Institute. In this post, they are highlighting the Perfusion Lab run by Drs. Shannon Tessier, Asishana Osho, and Ali Rabi. The lab is a collaboration that shares one common goal: making more hearts available for transplantation. **Read More**

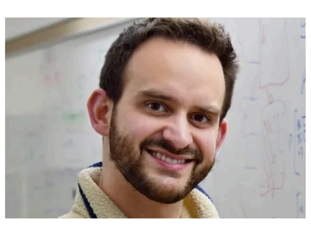
Dana-Farber Cancer Institute Leads the Launch of IGNITE Consortium to Eradicate Health Inequities in Pediatric Cancer Care

Dana-Farber Cancer Institute

In a bold step toward addressing the stark disparities in pediatric cancer care, Dana-Farber Cancer Institute is taking the lead in launching IGNITE—the first national, pediatric hematology-oncology health equity research consortium. This groundbreaking initiative aims to eradicate inequities for patients diagnosed with cancer or blood disorders. Dr. Kira Bona *(pictured)* is a founding member of IGNITE. **Read More**

Research Spotlight: Understanding How Cells Sense and Respond to the Presence of Nutrients

Massachusetts General Hospital



Dr. Max Valenstein *(pictured)* from Massachusetts General Hospital discusses the findings from his new paper in *Proceedings of the National Academy of Sciences*, "Rag–Ragulator is the central organizer of the physical architecture of the mTORC1 nutrient-sensing pathway". His team sought to better understand how nutrient-sensing complexes are recruited and held onto the lysosome. **Read More**

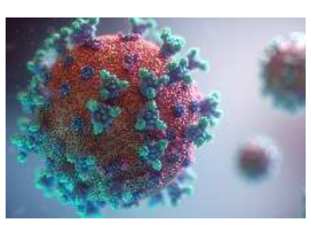
Dr. Eliz Amar Lewis on Using Many Tools to Fight a Sophisticated Disease

Wyss Institute

Dr. Eliz Amar Lewis *(pictured)* has always been fascinated by biology. But when she saw her grandmother bravely battle breast cancer, she was inspired to use her passion to develop a smart and sophisticated therapeutic platform to fight such a complex disease. Now, she's part of a collaborative, multidisciplinary team developing an RNA-based cancer immunotherapy platform. Her work is discussed in this month's Humans of the Wyss. **Read More**

Study Finds Persistent Infection Could Explain Long COVID in Some People

Brigham and Women's Hospital



Brigham researchers found people with wide-ranging long COVID symptoms were twice as likely to have SARS-CoV-2 proteins in their blood, compared to those without long COVID symptoms. A persistent infection could explain why some people experience long COVID symptoms. The team found evidence of persistent infection in 43% of participants with symptoms of long COVID. **Read More**

A "Game-Changing" New Drug for Schizophrenia?

The Brink

It's being hailed as a breakthrough for the 2.8 million American adults who battle schizophrenia. The US Food & Drug Administration has greenlit Bristol Myers Squibb's Cobenfy, reportedly making it the first major new treatment for the disorder in 70 years. Unlike other antipsychotic drugs, Cobenfy appears to alleviate schizophrenic delusions without the side effects that drive some patients to discontinue them. **Read More**

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Upcoming Events in Boston

October 17
3:00 PM
2024 Medicinal Chemistry Symposium: New Drugs on the Horizon
Bristol Myers Squibb

October 18
10:00 AM
NeuroBoston Fall 2024 Symposium
UMass Boston

October 23
10:00 AM
Scilligence Formulation for Drug Discovery
Online and at Scilligence Corporation

November 1
9:00 AM
Broad Institute Machine Learning in Drug Discovery Symposium 2024
Broad Institute

November 5
10:00 AM
Picture a Scientist: Film and Panel Discussion
Simmons University

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Science Jobs in Boston

Postdoctoral Research Fellow, Letai Lab
Dana-Farber Cancer Institute

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Takeda

Scientist, Oligonucleotide Bioanalytics
Intellia Therapeutics

Part Time Lecturer, Cell & Gene Therapies Laboratory Course
Northeastern University

Staff Scientist I
Beth Israel Deaconess Medical Center

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