

## Publications of the Week

A Calcium-Sensitive Antibody Isolates Soluble Amyloid- $\beta$  Aggregates and Fibrils from Alzheimer's Disease Brain

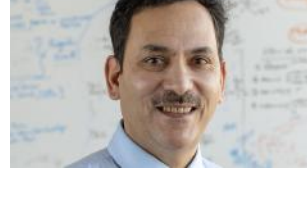
First Author: Andrew Stern | Senior Author: Dennis Selkoe (pictured)  
Brain | Brigham and Women's Hospital, Harvard Medical School, and Sanofi



Aqueously soluble oligomers of amyloid  $\beta$ -peptide (A $\beta$ ) may be the principal neurotoxic forms of A $\beta$  in Alzheimer disease (AD), initiating downstream events that include tau hyperphosphorylation, neurotrophic synaptic injury, microglia, and neuron loss. The authors report a unique human monoclonal antibody raised against synthetic A $\beta$  that potentially prevents AD brain A $\beta$ -induced impairment of hippocampal long-term potentiation. [Abstract](#)

## NK Cells in the Brain: Implications for Brain Tumor Development and Therapy

First Author: Aggilaas Balatsoukias | Senior Author: Khalid Shah (pictured)  
Trends in Molecular Medicine | Harvard Medical School, Brigham and Women's Hospital, and Harvard Stem Cell Institute



Natural killer (NK) cell therapies are finding their way as promising tools for more effective treatment of brain tumors. Their unique physiology makes NK cells particularly suited for this role, offering two major advantages: independence from antigen presentation by major histocompatibility complex molecules, and safety for allogeneic use. [Abstract](#)

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## Awards

## Awards &amp; Recognitions: January 2022

Harvard Medical School



Dr. Kamila Naxerova (pictured), Assistant Professor of Radiology at Massachusetts General, was named a 2022 Emerging Leader by the Mark Foundation for Cancer Research. The award supports innovative, high-risk, high-reward projects with significant potential to improve outcomes for cancer patients. Dr. Naxerova investigates how clonal evolution in the normal colon impacts the risk of early-onset colorectal cancer development. [Read More](#)

## Three from HMS Elected 2021 AAAS Fellows

Harvard Medical School



Three Harvard Medical School (HMS) researchers have been elected by their peers as 2021 Fellows of the American Association for the Advancement of Science (AAAS) for their contributions to medical sciences. Dr. Joseph Bonventre (pictured), the HMS Samuel A. Levine Distinguished Professor of Medicine at Brigham and Women's Hospital, was recognized for his research on kidney injury. [Read More](#)

## Five MIT Faculty Elected 2021 AAAS Fellows

McGovern Institute



Five MIT faculty members have been elected as fellows of the American Association for the Advancement of Science (AAAS). Dr. Guoping Feng's (pictured) research is devoted to understanding the development and function of synapses in the brain and how synaptic dysfunction may contribute to neurodevelopmental and psychiatric disorders. [Read More](#)

## Shlomit Schaal Elected to Association of University Professors of Ophthalmology Board of Trustees

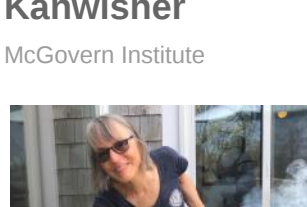
UMass Chan Medical School



Dr. Shlomit Schaal (pictured) has been elected by the Association of University Professors of Ophthalmology to its Board of Trustees. Her three-year term will begin April 1. "I embrace this role and I am humbled. Serving on the board of trustees is a priceless opportunity to help shape the future of academic ophthalmology," said Dr. Schaal, Chair and Professor of Ophthalmology and Visual Sciences. [Read More](#)

## National Academy of Sciences Honors Cognitive Neuroscientist Nancy Kanwisher

McGovern Institute



The National Academy of Sciences (NAS) has announced that Dr. Nancy Kanwisher (pictured), the Walter A. Rosenblith Professor of Cognitive Neuroscience in MIT's Department of Brain and Cognitive Sciences, has received the 2022 NAS Award in the Neurosciences for her "pioneering research into the functional organization of the human brain." [Read More](#)

## Louis C. Gerstenfeld, PhD, Receives Lifetime Achievement Award

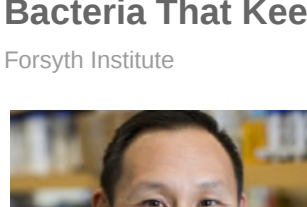
BU School of Medicine



Dr. Louis Gerstenfeld (pictured), Professor of Orthopaedic Surgery, has been selected as the 2022 recipient of the inaugural Orthopaedic Research Society (ORS) International Section of Fracture Repair (ISFR) Lifetime Achievement Award. The award honors highly accomplished individuals who have throughout their career demonstrated and promoted the values of the ORS ISFR in their leadership, service, education, and professional relationships. [Read More](#)

## Forsyth Researcher Awarded RO1 Grant to Investigate the Ultrasmall Bacteria That Keep Other Bacteria in Check

Forsyth Institute



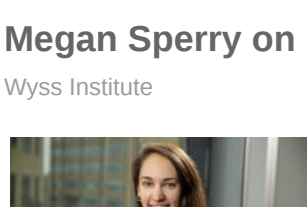
Forsyth Institute scientists in Dr. Batbilge Bor's (pictured) lab and collaborators found that a group of bacteria called Saccharibacteria may protect humans against oral pathogens, upending the previously held belief that these microbes are disease-causing. This discovery opened up a whole new area of exploration in the field of microbiology, and the Bor lab was granted a five-year Research Project Grant (R01) from the National Institutes of Health to study these microbes further. [Read More](#)

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## Local News

## Megan Sperry on Developing Therapeutics for Traumatic Injuries

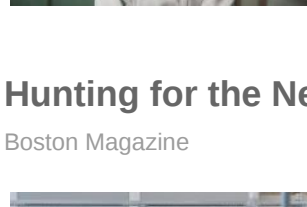
Wyss Institute



In the months and years after Dr. Megan Sperry (pictured) developed stress fractures in her back from competitive figure skating, she found that the pain she felt didn't correspond to the state of her healing — some of the fractures never fully healed, yet the pain was sometimes gone, sometimes present. This sparked her scientific interest in injury and pain. [Read More](#)

## Hunting for the Next Moderna

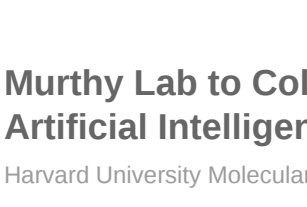
Boston Magazine



Moderna and its first-of-a-kind COVID vaccine helped save the world — further cementing Bostonians as titans of innovation. Still, as a city awash in world-class hospital systems and explosive biotech firms, Bostonians have never been ones to rest on their laurels. Which begs the question: what's next? Boston Magazine dug deep for innovations with the potential to transform lives (and wallets). [Read More](#)

## Murthy Lab to Collaborate with NTT Research on Biologically-Inspired Artificial Intelligence Algorithms

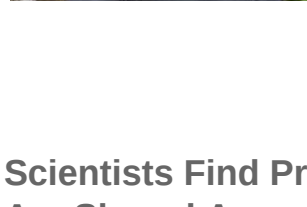
Harvard University Molecular and Cellular Biology (MCB)



MCB Faculty Dr. Venki Murthy (pictured) has been named a primary investigator in a new joint project between Harvard's Center for Brain Science, where Dr. Murthy serves as Paul J. Finnegan Family Director, and Nippon Telegraph and Telephone (NTT) Research's Physics and Informatics (PHI) Laboratories. The PHI Lab's mission is to "rethink 'computation' within the fundamental principles of quantum physics and brain science and to develop hardware and software simultaneously." [Read More](#)

## Scientists Find Predictors of Heart Disease Among Black Americans That Are Shared Across Ethnicities

Beth Israel Deaconess Medical Center (BIDMC)



Black Americans are at greater risk of coronary heart disease than non-Hispanic white individuals; however, because Black Americans are underrepresented in clinical research, established risk prediction models do not fully capture their risk. Dr. Robert Gerszten (pictured) and a team from BIDMC analyzed blood plasma samples from 2,346 participants of the Jackson Heart Study, and found 46 different metabolites that were consistently linked with coronary heart disease among Black individuals. [Read More](#)

## Placebo Effect Accounts for More than Two-Thirds of COVID-19 Vaccine Adverse Events, Researchers Find

Beth Israel Deaconess Medical Center



In a new meta-analysis of randomized, placebo-controlled COVID-19 vaccine trials, researchers at Beth Israel Deaconess Medical Center compared the rates of adverse events reported by participants who received the vaccines to the rates of adverse events reported by those who received a placebo injection containing no vaccine. [Read More](#)

## Randomized Controlled Trial Offers Insights on How the Timing of Dinner and Genetics Affect Individuals' Blood Sugar Control

Brigham and Women's Hospital



Blood sugar control, which is impaired in individuals with diabetes, is affected by various factors — including the timing of meals relative to sleep. "We decided to test if late eating that usually occurs with elevated melatonin levels results in disturbed blood sugar control," says senior author Dr. Richa Saxena (pictured) a Principal Investigator at the Center for Genomic Medicine at Massachusetts General Hospital. [Read More](#)

## Landing Therapeutic Genes Safely in the Human Genome

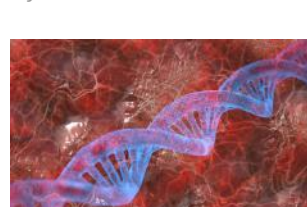
Wyss Institute



Many future gene and cell therapies to treat diseases like cancer, rare genetic and other conditions could be enhanced in their efficacy, persistence, and predictability by so-called "genomic safe harbors." These are landing sites in the human genome able to safely accommodate new therapeutic genes without causing other, unintended changes in a cell's genome that could pose a risk to patients. [Read More](#)

## Communicating Science: Yang Wang Discusses Drug Resistance in COVID-19

UMass Chan Medical School



Dr. Yang Wang (pictured), Professor of Medicine and Deputy Director of Product Discovery at MassBiologics of UMass Chan Medical School, leads a team of scientists working to discover and develop antibody-based medicines for infectious diseases and to understand drug resistance in those medicines. "The world is full of viruses that can cause human disease," said Dr. Wang. [Read More](#)

## New Results Help Understand Early Indicators of Neurologic Risk

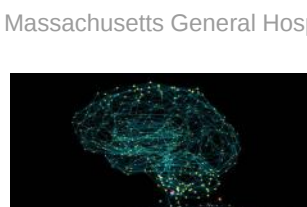
Massachusetts General Hospital



New research from the McCance Center, currently out for review, covers a new way to measure the risk of developing brain disease. The authors' objective was to create a brain health score for a cohort of patients seen in the Sleep Laboratory at the Massachusetts General Hospital and quantify how well it predicts neurologic outcomes. They aimed to perform a survival analysis with an 11-year follow-up period and to identify important covariates for each outcome. [Read More](#)

## #WhyIScience Q&amp;A: A Computational Scientist Aims to Help Patients and Enable Scientific Discoveries with New Data Analysis Tools

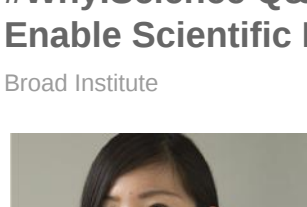
Broad Institute



As an undergraduate studying biology in Japan, Dr. Junko Tsuji (pictured) suspected there were quicker ways to do research. For her capstone project at Soka University, she had been helping to develop a device that could separate individual cells for experiments, a project that required her to visit the lab daily to keep the cells alive. She wondered if a computational approach could make these experiments go faster, so she began learning about bioinformatics. [Read More](#)

## COVID-19 Vaccines Don't Cause Infertility or Harm Pregnancy Chances, BU Research Shows

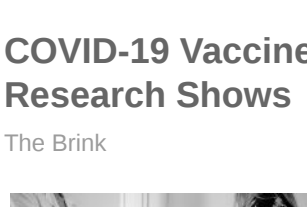
The Brink



Having a COVID-19 vaccine doesn't impact a couple's chances of becoming pregnant — but skipping the shots and landing a coronavirus infection might reduce male fertility. Those are the findings in a paper published in the *American Journal of Epidemiology* by researchers at the Boston University (BU) School of Public Health. [Read More](#)

## Could Concussion Be Monitored through Urine Samples?

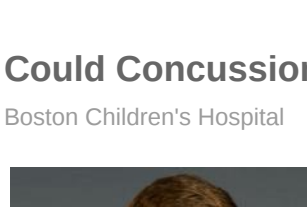
Boston Children's Hospital



Concussion can be frustratingly hard to diagnose and track. The injury doesn't show up on routine brain scans, and there is no definitive diagnostic test. "Athletes usually want to go back to their sport, so lots of times they say, 'I feel great, doc,' putting themselves at risk should they sustain a second brain injury," says Dr. William Meehan (pictured). [Read More](#)

## Newly Discovered DNA Repair Mechanisms Point to Potential Therapy Targets for Cancer and Neurodegenerative Diseases

Massachusetts General Hospital



The DNA that lies tightly coiled in nearly every human cell is subjected to thousands of insults and injuries from within and without daily, which is why the human body has evolved multiple highly-effective mechanisms for repairing DNA damage. "We have in place exquisite mechanisms to repair DNA breaks, and when those fail, we end up with disease," says Dr. Raul Mostoslavsky (pictured, front, second from right). [Read More](#)

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## Upcoming Events in Boston

February 3 6:00 PM	MIT Biotech Networking Night Online
February 8 11:30 AM	Innovators in Therapeutics Speaker Series with Vas Narasimhan Online
February 8 12:00 PM	Research Connection Live: Science behind mRNA Vaccines Online
February 8 3:30 PM	Astellas Pharma Day MassBioHub & Online
February 10 5:00 PM	MassBio Trivia MassBioHub

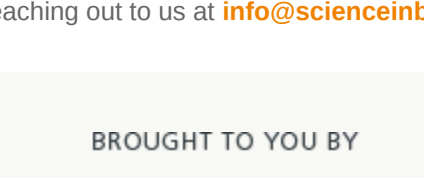
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## Science Jobs in Boston

Progen Development Scientist, Commercial Drug Product Amgen
Scientist/Senior Scientist, Protein Analytics Cue Biopharma
Senior Manager/Associate Director, Cell Line & Upstream Process Development Mersana Therapeutics
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Research Fellow Beth Israel Deaconess Medical Center

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