

### Publications of the Week

#### Mammalian Brain Glycoproteins Exhibit Diminished Glycan Complexity Compared to Other Tissues

First Author: Sarah Williams | Senior Authors: Robert Mealer and Richard Cummings *(pictured)*  
 Nature Communications | Massachusetts General Hospital, Harvard Medical School, Beth Israel Deaconess Medical Center, and the Broad Institute



Glycosylation is essential to brain development and function, but prior studies have often been limited to a single analytical technique and excluded region- and sex-specific analyses. Using several methodologies, the authors analyze asparagine-linked and serine/threonine/tyrosine-linked protein glycosylation between brain regions and sexes in mice. A consistent pattern is observed between regions, and sex differences are minimal compared to those in plasma. [Abstract](#)

#### MicroRNA-Mediated Control of Myocardial Infarction in Diabetes

First Author: Daniel Pérez-Cremades | Senior Author: Mark Feinberg *(pictured)*  
 Trends in Cardiovascular Medicine | Brigham and Women's Hospital and Harvard Medical School



microRNAs (miRNAs) are evolutionary conserved small non-coding RNAs involved in the regulation of biological processes by interfering in gene expression at the post-transcriptional level. Accumulating studies in the last two decades have uncovered the role of stage-specific miRNAs associated with key pathological events observed in the hearts of people with diabetes and myocardial infarction. [Abstract](#)

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### Awards

#### Mikel Garcia-Marcos, PhD, Receives John J. Abel Award in Pharmacology

BU School of Medicine



Dr. Mikel Garcia-Marcos *(pictured)*, Associate Professor of Biochemistry, has been selected to receive the 2022 John J. Abel Award in Pharmacology from the American Society for Pharmacology and Experimental Therapeutics. Dr. Garcia-Marcos is receiving this award in recognition of his high impact and innovative work in the area of cellular signaling. [Read More](#)

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### Local News

#### New High-Throughput Method Greatly Expands View of How Mutations Impact Cells

Broad Institute



Broad scientists have developed a new approach for studying the functional effects of the millions of mutations associated with cancer and other diseases. "When you look at the genetic data from patients' tumors, you see that the majority of cancer-associated mutations are actually quite rare, which means we have few insights into what these mutations do," said Dr. Jesse Boehm *(pictured)* of the Broad's Cancer Program. [Read More](#)

#### Scientists Identify Potential Target in Ewing Sarcoma Cells

Dana-Farber Cancer Institute



Investigators led by Dana-Farber Cancer Institute's Dr. Kimberly Stegmaier *(pictured)* have discovered that knocking out a protein regulator in Ewing sarcoma cells causes the tumor cells to die from an overdose of a cancer-promoting protein. The regulator, a protein known as TRIM8, is critical to the survival of Ewing sarcoma cells because it controls the levels of EWS/FLI, which drives malignancy in the great majority of Ewing tumors. [Read More](#)

#### Skin-Related Side Effects Indicate Better Prognosis for Patients Taking Certain Cancer Drugs

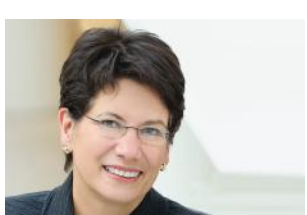
Massachusetts General Hospital



Immune checkpoint inhibitors, which strengthen the immune response against tumor cells, have become standard of care for many patients with advanced cancers; however, the medications can often cause side effects, most commonly affecting the skin. A new study led by researchers at Massachusetts General Hospital, including Dr. Yevgeniy Semenov *(pictured)*, indicates that these side effects may actually be an indicator that the medications are working. [Read More](#)

#### Phase I Clinical Trial of Moderna mRNA Vaccine for Epstein-Barr Virus Starting at UMass Chan

UMass Chan Medical School



UMass Chan Medical School researchers are embarking on a clinical trial of an mRNA vaccine by Moderna against the Epstein-Barr virus (EBV), a common cause of infectious mononucleosis. EBV has also been associated with several autoimmune disorders and has been implicated in the development of several cancers. Currently there is no approved vaccine for the highly contagious EBV, according to Dr. Katherine Luzuriaga *(pictured)*. [Read More](#)

#### Preparing for Tomorrow's Outbreaks

Harvard Medical School



A new study led by researchers at Harvard Medical School has identified a set of cellular receptors for at least three related alphaviruses shared across mosquitoes, humans, and animals that host these viruses. Understanding the basic biology of a virus's life cycle is crucial to finding a way to prevent an illness, and building such foundational knowledge before an outbreak is essential for preparing for future outbreaks, said study senior author Dr. Jonathan Abraham *(pictured)*. [Read More](#)

#### Next-Generation Tissue Expansion Method Improves Neural Imaging

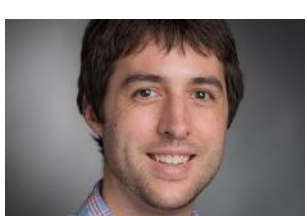
The Picower Institute



The glory of tissue expansion technologies is that when structures, such as proteins that build nerve cell connections, are too small for a microscope to resolve, clever chemistry can make everything bigger and easier to see. Dr. Kwanghun Chung *(pictured)* and co-authors show that with epitope-preserving magnified analysis of proteome (eMAP), many proteins at neural connections, or "synapses," can now be imaged when they could not before. [Read More](#)

#### Research Shows That Human Immune System Uses Ancient Family of Cell Death Proteins Also Found in Bacteria

Dana-Farber Cancer Institute



The human immune system, that marvel of complexity, subtlety, and sophistication, includes a billion-year-old family of proteins used by bacteria to defend themselves against viruses, scientists at Dana-Farber Cancer Institute and in Israel have discovered. "There has been a tremendous amount of work by researchers around the world to understand how the human immune system functions," says Dr. Philip Kranzusch *(pictured)*. [Read More](#)

#### A Case of Mistaken Identity: Researchers Unmask Cellular Source of Barrett's Esophagus

Dana-Farber Cancer Institute



For most cells within the body, identity is non-negotiable. A bladder cell cannot impersonate a blood cell. A liver cell remains a liver cell. One of the rare exceptions has been thought to be a condition known as Barrett's esophagus. Two recent studies by Dr. Harshabhad Singh *(pictured)* correct a longstanding misconception about the origins of Barrett's esophagus, and in doing so may point to new avenues of treatment or prevention to lower the risk of esophageal cancer. [Read More](#)

#### Delta Danger in Pregnancy Scrutinized

The Harvard Gazette



A growing body of evidence has linked the Delta variant of SARS-CoV-2, the virus that causes COVID-19, with an increased risk for pregnancy complications, including stillbirths. Now, for the first time, researchers at Massachusetts General Hospital and Brigham and Women's Hospital have detected the Delta variant in the blood and placentas of women who had stillbirths and serious pregnancy complications, which they report in the *Journal of Infectious Diseases*. [Read More](#)

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### Interesting Articles

#### White House Calls for Consistent Rules for Disclosing Foreign Research Funding

Science



President Joe Biden's administration last week ordered federal agencies to draft uniform policies describing the outside sources of funding that scientists must disclose when they apply for federal grants, and the penalties for failing to do so. Research groups welcome the directive, but wish it had also specified what kinds of foreign collaborations might get a scientist in trouble. [Read More](#)

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### Upcoming Events in Boston

- January 26 8:30 AM **2022 Policy Leadership Breakfast**  
Online
- January 26 4:00 PM **Research on Tap: Climate Change & Health: Understanding and Reducing Impacts**  
Online
- February 3 6:00 PM **MIT Biotech Networking Night**  
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

- Research Associate II, Viral Genomics**  
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- Lead Staff Scientist, Biomarker Discovery**  
Harvard Medical School
- Research Technician**  
Massachusetts General Hospital
- Senior Scientist, Oncology**  
Glyimpse Bio
- Research Associate III, Clinical Immunology**  
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