

Publications of the Week
Genome-Wide Pleiotropy Analysis of Coronary Artery Disease and Pneumonia Identifies Shared Immune Pathways

First Author: Zhi Yu | Senior Author: Pradeep Natarajan (pictured) | Science Advances | Broad Institute, Massachusetts General Hospital, Harvard Medical School, and Brigham and Women's Hospital



Coronary artery disease (CAD) remains the leading cause of death despite scientific advances. The authors performed genome-wide pleiotropy analyses of CAD and pneumonia, examined the causal effects of the expression of genes near independently replicated single-nucleotide polymorphisms and interacting genes with CAD and pneumonia, and tested interactions between disruptive coding mutations of each pleiotropic gene and smoking status on CAD and pneumonia risks. [Abstract](#)

ADAR1 and Its Implications in Cancer Development and Treatment

First Author: Allison Baker | Senior Author: Frank Slack (pictured) | Trends in Genetics | Harvard Medical School and Beth Israel Deaconess Medical Center



The epitranscriptome represents an emerging novel layer of gene regulation that goes awry in cancer. Many RNA-modifying enzymes have been implicated in cancer, including the adenosine-to-inosine (A-to-I) editors called adenosine deaminases acting on RNA (ADARs). ADARs are multifunctional proteins that regulate the transcriptome via A-to-I editing, RNA binding, and direct protein interactions. [Abstract](#)

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Awards
Aging Brain Initiative Awards Fund Five New Ideas to Study, Fight Neurodegeneration

The Picower Institute



To spur fresh, promising approaches and to encourage new experts and expertise to join the field of neurodegenerative disease research, MIT's Aging Brain Initiative has awarded five seed grants after a competition among labs across the Institute. Dr. Ann Graybiel's (pictured) lab will test the hypothesis that mutations on a specific gene may lead to the early emergence of Alzheimer's disease pathology in the striatum. [Read More](#)

Ruth Lehmann to Receive the Vanderbilt Prize in Biomedical Science

Whitehead Institute



This year's Vanderbilt Prize in Biomedical Science will be awarded to Whitehead Institute Director Dr. Ruth Lehmann (pictured). It recognizes women scientists with a stellar record of research accomplishments who also have made significant contributions to mentoring other women in science. "I'm thrilled to be receiving this honor, recognizing the importance of mentoring and empowering the next generation of scientists," says Dr. Lehmann. [Read More](#)

Awards & Recognitions: April 2022

Harvard Medical School (HMS)



Dr. Joan Brugge (pictured), Louise Foote Pfeiffer Professor of Cell Biology at HMS, received the Victoria's Secret Global Fund for Women's Cancers 2022 Meritorious Awards, in partnership with Pelotonia and the American Association for Cancer Research. The new award recognizes influential female researchers who have made contributions to the fundamental understanding and treatment of gynecologic cancers. [Read More](#)

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Local News
Thyroid Hormone Found to Be a Missing Ingredient in Lab-Made Liver Cells

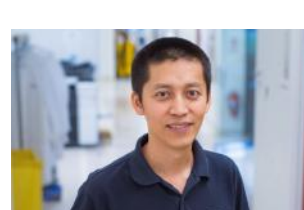
Whitehead Institute



Stem cells are the versatile building blocks from which every cell type in the body, from neurons, to skin cells, to blood cells, is ultimately descended. Whitehead Institute Founding Member Dr. Rudolf Jaenisch (pictured) not only uses these cells in his research, but has spent much of his career discovering and improving the methods for making accurate laboratory models out of stem cell-derived cells. [Read More](#)

Researchers Biosynthesize Anti-Cancer Compound Found in Venomous Australian Tree

Whitehead Institute



The Australian stinging tree (*Dendrocnide moroides*) is a plant that many people avoid at all costs. The tree, which is a member of the nettle family, is covered in thin silicon needles laced with one of nature's most excruciating toxins, a compound called moroidin. "It's notorious for causing extreme pain, which lingers for a very long time," said Whitehead Institute Member Dr. Jing-Ke Weng (pictured). [Read More](#)

Vaskar Gnyawali on Bringing Science to Life

Wyss Institute



Early in his professional life, Dr. Vaskar Gnyawali (pictured) realized he wasn't content sitting in front of a computer screen all day, so he shifted from software engineering to microsystems engineering. Now, he develops technologies that can be used by people in need, whether they're suffering from disease or living in an under-resourced country like Nepal where he grew up. [Read More](#)

Study Finds New Patterns of Antibiotic Resistance Spread in Hospitals

Broad Institute



Bacteria that cause infections in hospitals are increasingly becoming resistant to antibiotics, and a group of bacterial species called *Enterobacterales* that are able to fend off a type of antibiotic called carbapenems are a particular problem. They cause difficult-to-treat, often fatal infections, and can spread between patients within hospital settings, creating outbreaks that can be hard to contain. [Read More](#)

Genetic Analysis Provides Insights into the Cause of Hydrocephalus, or "Water on the Brain"

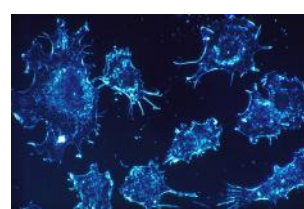
Massachusetts General Hospital



Hydrocephalus, or "water on the brain," occurs when the cerebral ventricles — four interconnected cavities of the brain that are filled with cerebrospinal fluid — become enlarged, but its cause is unknown in many cases. A better understanding could lead to improved treatments for hydrocephalus, which is the leading reason for brain surgery in children and is associated with neurodevelopmental disability. [Read More](#)

Getting Under Our Skin

Harvard Medical School



Melanoma is a somewhat unusual cancer — one that blooms before our very eyes, often on sun-exposed skin, and can quickly become deadly as it turns our own skin against us and spreads to other organs. Fortunately, when caught early, melanoma can often be cured by simple surgery, and there are now better treatments for advanced cases, including immunotherapies that prime a patient's immune system to fight off the cancer. [Read More](#)

Structures Considered Key to Gene Expression Are Surprisingly Fleeting

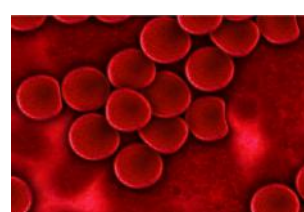
MIT News



In human chromosomes, DNA is coated by proteins to form an exceedingly long beaded string. This "string" is folded into numerous loops, which are believed to help cells control gene expression and facilitate DNA repair, among other functions. A new study from Dr. Anders Sejr Hansen's (pictured) lab suggests that these loops are very dynamic and shorter-lived than previously thought. [Read More](#)

Phase III Clinical Trial Results Lead to Approval of Oral Drug for Red Blood Cell Disorder

Massachusetts General Hospital



Researchers have published the results of a clinical trial that led the US Food and Drug Administration to recently approve mitapivat for the treatment of adults with pyruvate kinase deficiency — a rare genetic condition that leads to the destruction of red blood cells, or hemolytic anemia. The primary results from the global, phase III, randomized, placebo-controlled trial are published in the *New England Journal of Medicine*. [Read More](#)

Dana-Farber Cancer Institute Receives \$11M to Intercept and Cure Deadly Cancers

Dana-Farber Cancer Institute



Dana-Farber Cancer Institute was awarded more than \$11 million in grants to intercept cancer at the earliest stages and find cures to several of the deadliest cancers including pancreatic and ovarian cancers, and glioblastoma — diseases with poor prognoses in which progress has been slow. This work is funded by Break Through Cancer and is a part of \$50 million in grants being made to teams across five cancer research centers. [Read More](#)

Is Five Days of COVID Isolation Enough? New BU Study Has Some Answers

The Brink



When the Centers for Disease Control and Prevention said in January it was shifting its recommended isolation period for people infected with COVID-19 from ten days down to five days, followed by five days of mask-wearing, there were some concerns or questions about whether five days of isolation was too short. A new study from researchers at BU and Boston Medical Center offers some clues about whether five days is sufficient to ensure the broad safety of both those infected and the community at large. [Read More](#)

Who Is Watching the Watchman on Yeast Peroxisome?

Harvard University Department of Molecular and Cellular Biology



In a new paper published in *eLife*, Dr. Vladimir Denic's (pictured) lab investigated how budding yeast breaks down damaged peroxisome organelles through a type of autophagy called "pexophagy." Researchers who study "selective autophagy" processes, where only certain organelles are targeted for destruction, have long wondered how the cell selects the correct target for autophagy. [Read More](#)

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Upcoming Events in Boston

 April 27
8:00 AM

Turning Great Ideas into Dollars: The Life-Cycle of a Start-Up – Part One
MassBioHub

 April 27
4:30 PM

Tufts@Kendall: Advances in Immunology and Inflammation
MassBio

 April 29
10:00 AM

Annual MIT Microbiome Symposium 2022
MIT Media Lab

 May 5
8:30 AM

2022 State of Possible Conference
Royal Sonesta Boston

 May 17
9:00 AM

Securing the Future of Agriculture
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