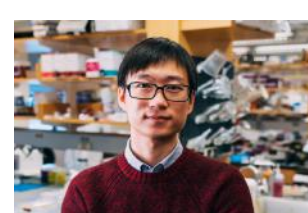


**Publications of the Week**
**Compression-Induced Dedifferentiation of Adipocytes Promotes Tumor Progression**

First Author: Ywei Li | Senior Author: Ming Guo [\(pictured\)](#)  
 Science Advances | Massachusetts Institute of Technology, Harvard University and Boston Children's Hospital



Dysregulated physical stresses are generated during tumorigenesis that affect the surrounding compliant tissues including adipocytes. However, the effect of physical stressors on the behavior of adipocytes and their cross-talk with tumor cells remain elusive. The authors demonstrated that compression of cells, resulting from various types of physical stresses, can induce dedifferentiation of adipocytes via mechanically activating Wnt/ $\beta$ -catenin signaling. [Profile](#) | [Abstract](#)

**A Model for the Emergence of RNA from a Prebiotically Plausible Mixture of Ribonucleotides, Arabinonucleotides, and 2'-Deoxynucleotides**

First Author: Seohyun Chris Kim | Senior Author: Jack Szostak [\(pictured\)](#)  
 Journal of American Chemical Society | Massachusetts General Hospital



The abiotic synthesis of ribonucleotides is thought to have been an essential step toward the emergence of the RNA world. In order to understand how relatively homogeneous RNA could have emerged from complex mixtures of various canonical nucleotides, the authors examined the properties of arabinonucleotides and 2'-deoxyribonucleotides in nonenzymatic template-directed primer extension reactions. [Abstract](#)

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**Awards**
**Gerald Fink Is Awarded the Genetic Society of America's Thomas Hunt Morgan Medal**

Whitehead Institute



Whitehead Founding Member and former Director Dr. Gerald R. Fink [\(pictured\)](#) has been awarded the 2020 Thomas Hunt Morgan Medal - bestowed by the Genetics Society of America (GSA). The award recognizes a distinguished scientist who has a lifetime achievement in the field of genetics and a strong history as a mentor to fellow geneticists. The GSA is an international community of more than 5,000 scientists who advance the field of genetics. [Read More](#)

**Dana-Farber Nurse Practitioner Honored by American Cancer Society**

Dana-Farber Cancer Institute



The American Cancer Society recently presented Eileen Duffey-Lind [\(pictured\)](#), a pediatric nurse practitioner at Dana-Farber Cancer Institute/Boston Children's Hospital, with a Sandra C. Labaree Volunteer Values Award. The award is the most honored accolade by the Society in New England, and it recognizes Duffey-Lind's remarkable accomplishments in support of the Society's mission to celebrate lives, to save lives and to lead the fight for a world without cancer. [Read More](#)

**Dana-Farber Leader, Laurie H. Glimcher, MD, Named to Stand Up to Cancer Scientific Advisory Committee**

Dana-Farber Cancer Institute



Stand Up to Cancer (SU2C) with its scientific partner, the American Association of Cancer Research, has announced that Dr. Laurie H. Glimcher [\(pictured\)](#), President and CEO of Dana-Farber Cancer Institute, Director of the Dana-Farber/Harvard Cancer Center and the Richard and Susan Smith Professor of Medicine at Harvard Medical School, is the newest member of the SU2C Scientific Advisory Committee. [Read More](#)

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**Local News**
**Good Early Results with Gene Therapy for Rare Immune Deficiency**

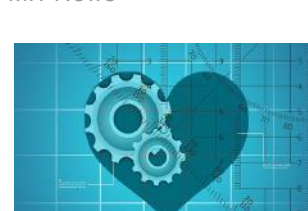
Boston Children's Hospital



Chronic granulomatous disease (CGD) is a rare inherited disorder of phagocytic cells. Scientists at Boston Children's Hospital have reported the initial results of nine severely affected X-linked CGD patients who received ex vivo autologous CD34+ hematopoietic stem and progenitor cell-based lentiviral gene therapy following myeloablative conditioning in first-in-human clinical studies. So far the results have been positive. [Read More](#)

**Engineers Design Bionic "Heart" for Testing Prosthetic Valves, Other Cardiac Devices**

MIT News



As the geriatric population is expected to balloon in the coming decade, so too will rates of heart disease in the United States. The demand for prosthetic heart valves and other cardiac devices is predicted to rise by almost 13 percent in the next six years. Now engineers at MIT and elsewhere have developed a bionic "heart" that offers a more realistic model for testing out artificial valves and other cardiac devices. [Read More](#)

**Bone Marrow-on-a-Chip Provides New Research Directions for Shwachman-Diamond Syndrome**

Boston Children's Hospital



A new research tool that mimics the behavior of diseased bone marrow provides a new strategy for understanding the bone marrow disease, Shwachman-Diamond syndrome (SDS), and hopefully, developing new treatments. With SDS, bone marrow fails to produce blood cells normally, leading to bone marrow failure and an increased risk of leukemia. [Read More](#)

**Pneumonia Recovery Reprograms Immune Cells of the Lung**

Boston University School of Medicine



Scientists, led by Dr. Joseph Mizgerd [\(pictured\)](#), have determined that after lungs recover from infection, alveolar macrophages are different in multiple ways and those differences persist indefinitely. Boston University School of Medicine researchers have proposed that the new alveolar macrophage biology resulting from prior experiences with infections is one of the elements helping to protect the lungs of young adults against pneumonia. [Read More](#)

**Blood Pressure Drug Linked to Lower Risk of Gout**

BIDMC News



Gout is characterized by a sudden onset of pain, swelling and stiffness in the joints and caused by the formation of urate crystal in small spaces between joints that builds up when high amounts of uric acid circulate in the blood. A new study led by physician-researchers at Beth Israel Deaconess Medical Center (BIDMC) reports that the antihypertensive drug amlodipine lowered long-term gout risk compared to two other drugs commonly prescribed to lower blood pressure. [Read More](#)

**Revvng the Engine**

Harvard Medical School



The heart's ability to beat normally over a lifetime is predicated on the synchronized work of proteins embedded in the cells of the heart muscle. Now a study led by researchers at Harvard Medical School and Brigham and Women's Hospital shows that when too many of the heart's molecular motor units get switched on and too few remain off, the heart muscle begins to contract excessively and fails to relax normally, leading to its gradual overexertion, thickening and failure. [Read More](#)

**Next Generation of Organ-on-Chip Has Arrived**

Harvard Gazette



Drug development is an arduous and costly process, and failure rates in clinical trials that test new drugs for their safety and efficacy in humans remain high. To help address this bottleneck in drug development, scientists at Harvard's Wyss Institute for Biologically Inspired Engineering, have developed a "body-on-chips" platform that links 10 different organ chips, and mimics normal human blood flow between them. [Read More](#)

**Micro-Scaled Method Holds Promise as Improved Cancer Diagnostic Platform**

Broad Institute



Using a single-needle biopsy and new technology for tumor diagnosis developed by Baylor College of Medicine and the Broad Institute of MIT and Harvard, researchers have been able to provide a more detailed and wider window into cancer biology, tumor type, and the mechanisms of response and resistance to therapy compared to conventional approaches. [Read More](#)

**Printing Objects That Can Incorporate Living Organisms**

MIT News



A method for printing 3D objects that can control living organisms in predictable ways has been developed by an interdisciplinary team of researchers at MIT and elsewhere. The technique may lead to 3D printing of biomedical tools, such as customized braces, that incorporate living cells to produce therapeutic compounds such as painkillers or topical treatments, the researchers say. [Read More](#)

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**Interesting Articles**
**The FDA is Approving Drugs Faster, but That May Not Be a Good Thing**

BioSpace



In the second research report published this year so far, investigators found that the U.S. Food and Drug Administration (FDA) is approving drugs faster than ever. Unfortunately, it appears that the agency is also approving those drugs on less data and weaker evidence. The report questioned if the FDA and other regulatory agencies worldwide don't rush certain approvals, particularly at the end of the year in a kind of "desk-clearing" activity. [Read More](#)

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February 5 9:00 AM	Are Your Trade Secrets Walking Out the Door?
February 25 9:00 AM	Leading the Change to Continuous Manufacturing Of Small Molecules
February 26 3:00 PM	8th Neurodegenerative Drug Development Summit
February 27 9:00 AM	AI Powered Drug Discovery and Manufacturing Conference 2020

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