

Publications of the Week
A Novel Protective Role for Matrix Metalloproteinase-8 in the Pulmonary Vasculature

First Author: Paul Dieffenbach | Senior Author: Laura Fredenburgh (pictured) American Journal of Respiratory and Critical Care Medicine | Brigham and Women's Hospital, Broad Institute, Boston Children's Hospital, and Massachusetts General Hospital



Matrix metalloproteinase-8 (MMP-8) is an interstitial collagenase involved in regulating inflammation and fibrosis of the lung and systemic vasculature, but its role in pulmonary arterial hypertension (PAH) pathogenesis remains unexplored. MMP-8 levels were measured in plasma from pulmonary hypertension (PH) patients and controls by ELISA. MMP-8 vascular expression was examined in lung tissue from PAH patients and rodent models of PH. [Abstract](#)

Quantitative Proteomics Reveals the Selectivity of Ubiquitin-Binding Autophagy Receptors in the Turnover of Damaged Lysosomes by Lysophagy

First Author: Vinay Eapen | Senior Author: Wade Harper (pictured) eLife | Harvard Medical School



Removal of damaged organelles via the process of selective autophagy constitutes a major form of cellular quality control. The authors employ quantitative organelle capture and proximity biotinylation proteomics of autophagy adaptors, cargo receptors, and Galectins in response to acute lysosomal damage, thereby revealing the landscape of lysosome-associated proteome remodeling during lysophagy. [Abstract](#)

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Awards
George Murphy Recipient of 2021 Healthy Longevity Catalyst Award

BU School of Medicine



Dr. George Murphy (pictured), Associate Professor of Medicine, and Co-Director of the Boston Medical Center/BU Center for Regenerative Medicine is a recipient of a 2021 Healthy Longevity Catalyst Award for his project "Deciphering Mechanisms of Disease Resistance and Longevity in Centenarians." Dr. Murphy is one of 25 awardees and will receive \$50,000 as seed funding to help advance his project. [Read More](#)

Harvard's Wyss Institute Receives Funding Award from BARDA

Wyss Institute



The Wyss Institute has been selected as one of three participants in a new federal ImmuneChip+ Program to develop advanced tissue chip platforms with immune system components and automated monitoring. As part of ImmuneChip+, the Wyss Institute received a contract award from the Biomedical Advanced Research and Development Authority (BARDA) that funds a one-year research program under the direction of Wyss Founding Director Don Ingber. [Read More](#)

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Local News
Large-Scale Genetic Repeat Variations Contribute to Height and Other Human Traits

Broad Institute



Over the last decade, geneticists studying how variations in DNA sequence between individuals can influence disease risk and other traits have largely focused on one type of variation: single-letter changes. Now a new study reveals how larger genetic modifications also significantly contribute to human traits. The study found that variable number tandem repeats are strongly associated with nearly two dozen traits, including height, hair curl, and risk for heart and kidney disease. [Read More](#)

MassBioEd Launches Novel Life Sciences Apprenticeship Program Statewide

MassBioEd



The Massachusetts Biotechnology Education Foundation (MassBioEd) has launched a new Life Sciences Apprenticeship program. The program, believed to be the first of its kind in the US, is designed to help expand the availability of trained personnel to meet the needs of a rapidly growing industry, to help diversify the talent available to biomanufacturing and clinical operations in the state, and to strengthen the commitment of many growing life sciences companies to the communities where they operate. [Read More](#)

NIAID Awards Phase I Contract to Kephera Diagnostics for the Development of a New Test for Chagas Disease

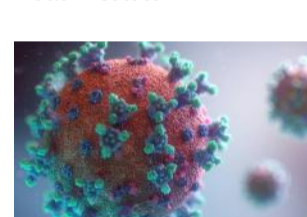
Kephera Diagnostics



The National Institute of Allergy and Infectious Diseases (NIAID) has awarded a Phase I, \$300,000 Small Business Innovative Research contract to Kephera Diagnostics to develop a new test for Chagas disease. The contract, awarded in response to a targeted solicitation from NIAID aimed at improving diagnostic resources for Chagas disease, will support the development and preliminary evaluation of a test that can discriminate active from successfully treated Chagas disease. [Read More](#)

Broad Institute Partners with CDC and Theiagen Genomics to Enable Pathogen Genomic Surveillance across the United States

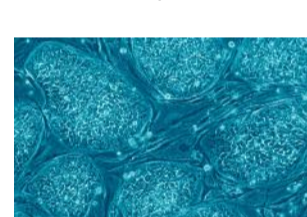
Broad Institute



The Broad Institute is partnering with the US Centers for Disease Control and Prevention (CDC) and Theiagen Genomics to support the adoption of Terra in US public health labs. Terra is a scalable and secure platform for biomedical researchers to access data, run analysis tools, and collaborate. Thirty public health labs across the country are already using Terra for genomic surveillance of the SARS-CoV-2 virus. [Read More](#)

Garuda Therapeutics Launches with \$72 Million Series A Financing

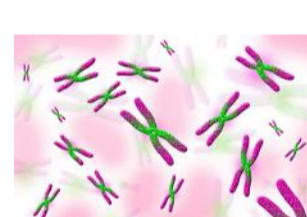
Garuda Therapeutics via Business Wire



Garuda Therapeutics, a company creating off-the-shelf, durable blood stem cell therapies, launched with an oversubscribed \$72 million Series A financing. Garuda is developing the world's first, off-the-shelf hematopoietic stem cell platform that will eliminate dependency on donor or patient cells. "Our technology has the potential to transform blood stem cell transplants, revolutionizing the landscape of medicine," said Dhvanit Shah, Co-Founder, President and CEO of Garuda Therapeutics. [Read More](#)

Broad Researchers Join a Collaborative Effort to Improve Diagnosis of Rare Genetic Diseases

Broad Institute



A newly funded consortium, the Genomics Research to Elucidate the Genetics of Rare Disease, will work to discover new genes underlying Mendelian diseases and return diagnoses to a greater proportion of patients and their families. Currently, only about 40 percent of individuals with a suspected rare genetic disease have a cause identified; more than half of Mendelian disease genes remain unknown. [Read More](#)

Lindsey Backman: Biochemist, Mentor, and Advocate

MIT News



Lindsey Backman (pictured) is a graduate student in the lab of Dr. Catherine Drennan at MIT, and researches the chemistry of the human microbiome, a collection of gut microbes essential to sustaining the body. Backman is interested in how certain bacteria can outcompete other strains by producing unique proteins that process abundant nutrients or repair broken enzymes. [Read More](#)

Taking the Guesswork Out of Genetic Engineering

Wyss Institute



A team at the Wyss Institute has created an integrated pipeline for performing genetic screening studies, encompassing every step of the process from identifying target genes of interest to cloning and screening them quickly and efficiently. The protocol, called Sequencing-based Target Ascertainment and Modular Perturbation Screening, is described in *Cell Reports Methods*, and the associated open-source algorithms are available on GitHub. [Read More](#)

Tackling Diabetes from Every Angle

Broad Institute



In the early 2010s, Dr. Jose Florez (pictured) and his collaborators knew that a disproportionate number of people from Latin America suffered from type 2 diabetes, but they didn't know why. To find the answer, he collaborated with colleagues in Mexico, and analyzed DNA from nearly 9,000 people from Latin America, with and without diabetes. [Read More](#)

Study Shows Fragile X Treatment Can Incur Resistance, Suggests Ways around It

The Picower Institute



Dr Mark Bear (pictured), Picower Professor of Neuroscience at MIT, recalls the "eureka moment" 20 years ago when he realized that a severe developmental brain disorder — fragile X syndrome — might be treated with drugs that inhibit a neurotransmitter receptor called mGluR5. The idea became well validated by experiments in his lab and others worldwide using several animal models of the disease. [Read More](#)

UMass Chan Medical School Establishes New Department of Systems Biology

UMass Chan Medical School



The Program in Systems Biology has been elevated to full department status, with Dr. Marian Walhout (pictured), the Maroun Semaan Chair in Biomedical Research and Professor of Molecular Medicine, serving as the Founding Chair. Dr. Walhout joined the Medical School in 2003 and has co-directed the Program in Systems Biology since its establishment in 2011. [Read More](#)

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Upcoming Events in Boston

- October 12 6:00 am **Picower Institute Fall 2021 Symposium | Dendrites: Molecules, Structure, and Function** Online
- October 14 5:00 pm **MassBio Oktoberfest** Cambridge Tech Square Lawn
- October 18 8:00 am **Sanofi Pharma Day 2021** Hybrid
- October 19 7:00 pm **Communicating About Science in a World of Misinformation: A Conversation with Linda Henry and Rick Berke** Online
- October 20 9:00 am **Jumpstarting Your Start Up** Online

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- Research Associate/Senior Research Associate, Translational Research** Werenwell Therapeutics
- Senior Scientist, T Cell Process Development** TCR² Therapeutics
- Postdoctoral/Associate Scientist, Immunology** Cygnal Therapeutics

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