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Publications of the Week

The Evolutionarily Conserved piRNA-Producing Locus *pi6* Is Required for Male Mouse Fertility

First Author: Pei-Hsuan Wu | Senior Author: Phillip Zamore *(pictured)*
Nature Genetics | UMass Medical School

Pachytene PIWI-interacting RNAs (piRNAs), which comprise >80% of small RNAs in the adult mouse testis, have been proposed to bind and regulate target RNAs like microRNAs, cleave targets like short interfering RNAs or lack biological function altogether. The authors report that males lacking piRNAs from a conserved mouse pachytene piRNA locus on chromosome 6 (*pi6*) produce sperm with defects in capacitation and egg fertilization. **Profile | Abstract**

Systematic Quantitative Analysis of Ribosome Inventory during Nutrient Stress

First Author: Heeseon An | Senior Author: Wade Harper *(pictured)*
Nature | Blavatnik Institute

The abundance of ribosomal (r)-proteins and their high arginine and lysine content has led to the hypothesis that they are selectively used as a source of basic amino acids during nutrient stress through autophagy. The authors integrated quantitative global translatome and degradome proteomics with genetically encoded Ribo–Keima and Ribo–Halo reporters to interrogate r-protein homeostasis with and without active autophagy. **Abstract**

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Awards

UMMS Researchers Forging New Understanding of BRCA Cancer Gene Function with NCI Grant

UMass Medical School

A UMass Medical School (UMMS) research team led by Dr. Sharon Cantor *(pictured)* has been awarded a National Cancer Institute (NCI) grant to advance understanding of how hereditary breast and ovarian cancer genes work, and why tumors lacking these genes are sensitive to chemotherapy. Their findings challenge decades of research in the field that suggested chemotherapy was effective because it breaks tumor DNA into pieces. **Read More**

Ankur Jain and Pulin Li Appointed to Prestigious Chairs

Whitehead Institute

Two Whitehead Institute Members — Ankur Jain *(pictured)* and Pulin Li — have been appointed to MIT Career Development Professorships. In addition to affirming Jain's and Li's status as emerging leaders in biomedical research, the appointment provides funding to advance their scientific initiatives, better enabling them to pursue new research directions and capitalize on new opportunities. **Read More**

U.S. Army Grant Advances UMMS Studies Targeting Key Melanoma Protein

UMass Medical School

The U.S. Department of Defense awarded a team of researchers led by Dr. Craig Ceol *(pictured)*, Assistant Professor of Molecular Medicine at UMass Medical School (UMMS), a $963,903 three-year grant to test potential approaches to killing metastatic melanoma tumors. The researchers will test whether antibodies targeting GDF6 can cause melanoma regression on their own or in combination with currently used therapies. **Read More**

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Local News

Better Vaccines Are in Our Blood

Wyss Institute

A team of researchers from Harvard's Wyss Institute and John A. Paulson School of Engineering and Applied Sciences has harnessed this innate ability to build a platform technology that uses red blood cells to deliver antigens to antigen-presenting cells in the spleen, generating an immune response. This approach successfully slowed the growth of cancerous tumors in mice, and could also be used as a biocompatible adjuvant for a variety of vaccines. **Read More**

Largest-Ever Study of Prostate Cancer Genomics in Black Patients IDs Potential Targets for Precision Therapies

BU School of Medicine

Black men in the United States are known to suffer disproportionately from prostate cancer, but few studies have investigated whether genetic differences in prostate tumors could have anything to do with these health disparities. Now, in the largest study of its kind to date, a national team including researchers from BU School of Medicine has identified genes that are more frequently altered in prostate tumors from men with African ancestry compared to other racial groups, though the reasons for these differences is not known. **Read More**

Lung Cancer Proteome Builds on Genetic Findings to Reveal Therapeutic Strategies

Broad Institute

Scientists from the Broad Institute and an international group of collaborators participating in the National Cancer Institute's Clinical Proteomics Tumor Analysis Consortium have reported that by taking a proteogenomic approach — one that integrates genomics with comprehensive proteomics — they have found how mutations that drive lung cancer affect the activity of key proteins, and also identified new interactions between lung tumors and the immune system. **Read More**

Broad Institute Launches Academic-Industry Cell Imaging Consortium to Speed Drug Discovery and Development

Broad Institute

The Imaging Platform at the Broad Institute, together with industry and non-profit partners, has launched a new collaboration to create a massive cell-imaging dataset, displaying more than 1 billion cells responding to over 140,000 small molecules and genetic perturbations. This microscopy image dataset will act as a reference collection to potentially fuel efforts for discovering and developing new therapeutics. **Read More**

Kymera and Sanofi Enter Anti-Inflammatory Deal Worth More than $2 Billion

BioSpace

Kymera Therapeutics, based in Cambridge, Massachusetts, has entered a strategic collaboration deal with Paris-based Sanofi. They will focus on developing and commercializing protein degrader therapies that target IRAK4 in immune-inflammatory diseases, such and rheumatoid arthritis. Kymera will advance the IRAK4 program into the clinic for Phase I trials. Sanofi will take over clinical development and commercialization at that point. **Read More**

Silencing of an ALS Gene Safely Delivered to Patients in UMass Medical School Study

UMass Medical School

Massachusetts General Hospital is the first to safely treat two research participants with a synthetic microRNA, delivered into the spinal fluid, designed to silence a human disease-causing gene. The study was led by Dr. Robert Brown Jr. *(pictured, right)*, Professor of Neurology and Director of the Program in Neurotherapeutics at UMass Medical School (UMMS), and Dr. Christian Mueller *(left)*, Associate Professor of Pediatrics at UMMS. **Read More**

Biostasis Project Advances to Next Phase of Development

Wyss Institute

The Wyss Institute's Biostasis project co-led by Dr. Donald Ingber *(pictured)*, which began just eighteen months ago as part of the Defense Advanced Research Projects Agency's Biostasis program, has successfully completed its project Phase 1 goals and moved into Phase 2 this month, on schedule despite the disruption of the global COVID-19 pandemic. **Read More**

Findings Weaken Notion that Size Equals Strength for Neural Connections

MIT News

Learning, memory, and behavioral disorders can arise when the connections between neurons, called synapses, do not change properly in response to experience. Scientists have studied this "synaptic plasticity" for decades, but a new study by researchers at MIT's Picower Institute highlights several surprises about some of the basic mechanisms by which it happens. **Read More**

Roche Pays $775M Upfront for Cambridge Biotech's Sophomore Cancer Drug

Boston Business Journal

A Cambridge biotech is rebounding from an FDA rejection by signing a deal with drug giant Roche worth upwards of $1.7 billion. Under the deal, Blueprint Medicines Corp. will work with Roche subsidiary Genentech to launch and sell its second cancer drug. Blueprint will receive $775 million upfront, and could see as much as $927 million in milestone payments, in addition to royalties on sales outside of the U.S. **Read More**

Glympse Bio Secures $46.7 Million to Advance NASH Biosensor Program

BioSpace

Cambridge, Massachusetts-based Glympse Bio has secured $46.7 million in a Series B fundraising round that will be used to support continued development of the company's novel biosensor platform in fibrotic diseases such as non-alcoholic steatohepatitis (NASH), oncology and infectious diseases. Glympse said the proceeds from the trial will be primarily aimed at its NASH program in hopes of developing an approved treatment for the disease. **Read More**

Diving into the Dark Side of Ependymoma

Boston Children's Hospital

Dr. Mariella Filbin *(pictured)*, a neuro-oncologist at Dana-Farber/Boston Children's Cancer and Blood Disorders Center, is driven by a desire to find new therapies for some of the hardest-to-treat pediatric brain tumors. Filbin's team set out to answer what makes ependymoma tumor cells more aggressive and others treatable. **Read More**

3M Partners with MIT Researchers to Develop US-Backed Rapid Coronavirus Antigen Test

CNBC

3M and researchers from MIT have announced a partnership to develop a rapid coronavirus antigen test they say will be widely available in the U.S. 3M and MIT's testing device, which is in the early stages of development, would function "like a pregnancy test," 3M senior technical manager Cathy Tarnowski told CNBC. It will be a paper-based point-of-care testing device, which will help reduce the cost, the company said. **Read More**

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12:00 PM
Women in Bio National Webinar: Growing Your Career and Personal Brand in Life Sciences and Biotech
Online

July 21
1:30 PM
Innovation & Biotech in the Time of COVID-19: Oncology
Online

July 23
12:00 PM
COVID-19: How's Reopening Going in Biotech Labs? Forum & Breakout Chats on Lessons Learned So Far
Online

July 29
12:00 PM
COVID-19: BioMaking Solutions – Computation-Mediated Protein Engineering of Robust Genome Editing and Anti-Viral Tools against SARS-CoV-2
Online

August 3
3:00 PM
Rebooting Your Research Program
Online

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Moderna

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