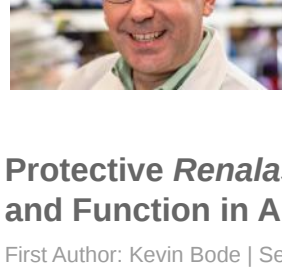


### Publications of the Week

## Dynamic BH3 Profiling Identifies Pro-Apoptotic Drug Combinations for the Treatment of Malignant Pleural Mesothelioma

First Author: Danielle Potter | Senior Author: Anthony Letai *(pictured)*  
 Nature Communications | Dana-Farber Cancer Institute, Harvard Medical School, Brigham and Women's Hospital, and the Broad Institute



Malignant pleural mesothelioma (MPM) has relatively ineffective first/second-line therapy for advanced disease and only 18% five-year survival for early disease. The authors use high throughput dynamic BH3 profiling to identify drug combinations that prime primary MPM cells derived from patient tumors, which also prime patient-derived xenograft models. [Abstract](#)

## Protective *Ren1a*-Deficiency in Beta Cells Shapes Immune Metabolism and Function in Autoimmune Diabetes

First Author: Kevin Bode | Senior Author: Stephan Kissler *(pictured)*  
 Diabetes | Joslin Diabetes Center and Harvard University



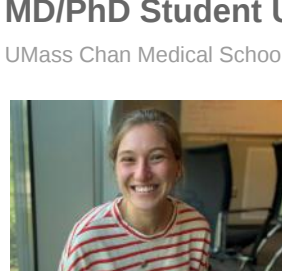
Type 1 diabetes (T1D) is caused by the immune-mediated loss of pancreatic beta cells that produce insulin. The latest advances in stem cell-beta cell differentiation methods have made a cell replacement therapy for T1D feasible. The authors show that *Ren1a* deletion endows beta cells with the capacity to modulate the metabolism and function of immune cells within the local graft microenvironment. [Abstract](#)

[View All Publications](#)

### Awards

## Craig Ceol Receives NIH Grant to Study Melanocyte Regeneration

UMass Chan Medical School



Dr. Craig Ceol *(pictured)*, Assistant Professor of Molecular Medicine, has received an award from the National Institute of Arthritis and Musculoskeletal and Skin Diseases to fund research on cellular and molecular regulators of melanocyte regeneration using zebrafish as a model. Melanocytes are cells responsible for both the pigmentation of zebrafish stripes and human skin and where melanoma originates. [Read More](#)

## MD/PhD Student Using NIH Award to Study Onset of Huntington's Disease

UMass Chan Medical School



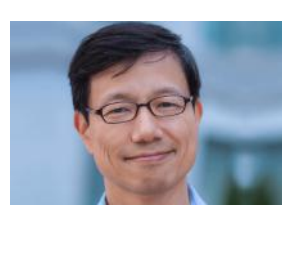
Jillian Belgrad *(pictured)*, an MD/PhD student at UMass Chan Medical School, has received a Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship from the National Institute of Neurological Disorders and Stroke to study the pathology that drives the development of Huntington's disease symptoms. Huntington's disease is a rare genetic condition that damages nerve cells in the brain and causes uncontrolled movements and a decline in cognitive ability. [Read More](#)

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### Local News

## CRISPR Studies Identify Many Promising Therapeutic Targets for Multiple Myeloma

Dana-Farber Cancer Institute



New research from Dana-Farber Cancer Institute has identified 116 genes as key molecular vulnerabilities for multiple myeloma. Most of these genes are potential leads for the discovery of new therapies for this disease. The study was published in *Nature Cancer*. Multiple myeloma is an incurable blood cancer that affects plasma cells, the antibody-producing cells of the body. [Read More](#)

## How Breast Cancer Arises

MIT News



In what may turn out to be a long-missing piece in the puzzle of breast cancer, Harvard Medical School researchers have identified the molecular sparkplug that ignites cases of the disease currently unexplained by the classical model of breast-cancer development. "We have identified what we believe is the original molecular trigger that initiates a cascade culminating in breast tumor development in a subset of breast cancers that are driven by estrogen," said study senior investigator Dr. Peter Park *(pictured)*. [Read More](#)

## From Molecular to Whole-Brain Scale in a Simple Animal, Study Reveals Serotonin's Effects

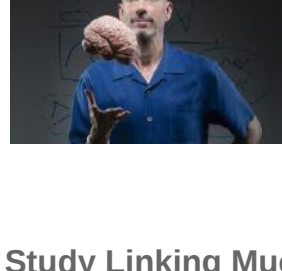
MIT News



Because serotonin is one of the primary chemicals the brain uses to influence mood and behavior, it is also the most common target of psychiatric drugs. In a new study, researchers at the Picower Institute working in a *C. elegans* model present a comprehensive accounting of how serotonin affects behavior from the scale of individual molecules all the way to the animal's whole brain. [Read More](#)

## Three Questions: A New Model of Nervous System Form, Function, and Evolution

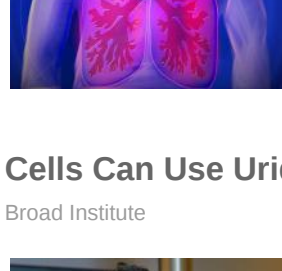
MIT News



How does animal behavior emerge from networks of connected neurons? Dr. Brandon Weissbourd, a new faculty member in the MIT Department of Biology and Investigator in the Picower Institute, uses the tiny, transparent jellyfish *Clytia hemisphaerica*, a new neuroscience model, to study nervous system evolution, development, regeneration, and function. [Read More](#)

## Mind to Molecules: Does Brain's Electrical Encoding of Information 'Tune' Sub-Cellular Structure?

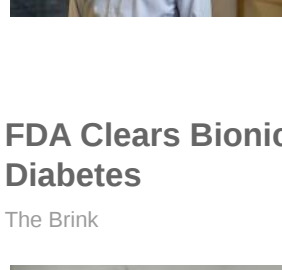
The Picower Institute



A new paper by researchers at MIT, City University of London, and Johns Hopkins University posits that the electrical fields of networks of neurons in the brain influence the physical configuration of neurons' sub-cellular components to optimize network stability and efficiency, a hypothesis the authors call "Cytoelectric Coupling." "The information the brain is processing has a role in fine-tuning the network down to the molecular level," said Dr. Earl Miller *(pictured)*. [Read More](#)

## Study Linking Mucus Plugs and COPD Mortality Could Help Save Lives

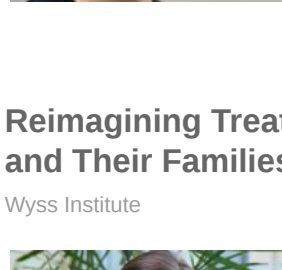
Brigham and Women's Hospital



Many patients with chronic obstructive pulmonary disease (COPD) experience airway-clogging mucus plugs, an accumulation of mucus in the lungs that can affect quality of life and lung functioning. A new study led by researchers from Brigham and Women's Hospital has found that mucus plugs were also associated with greater mortality. [Read More](#)

## Cells Can Use Uridine, a Component of RNA, As a Source of Energy

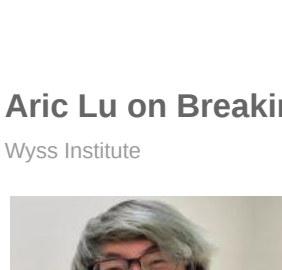
Broad Institute



Our bodies burn carbohydrates, proteins, and fat for fuel, and now, researchers at the Broad Institute of MIT and Harvard and the University of Lausanne have discovered another important energy source for cells: uridine, the chemical building block unique to RNA. The research team, which included Dr. Vamsi Mootha *(pictured)* from the Broad, pinpointed a biochemical pathway that cells use to break down uridine-derived sugar that they then burn for energy. [Read More](#)

## FDA Clears Bionic Pancreas Developed in BU Lab for People with Type 1 Diabetes

The Brink



A bionic pancreas — a wearable, pocket-sized, automated insulin delivery device — that was first developed in a Boston University lab has been cleared by the US Food and Drug Administration (FDA). Invented 20 years ago in the lab of Dr. Ed Damiano *(pictured)*, a BU College of Engineering Professor of Biomedical Engineering, the bionic pancreas combines an insulin infusion pump with algorithm-controlled dosing decision software. [Read More](#)

## Reimagining Treatment for Brain Diseases to Improve the Lives of Patients and Their Families: Ana Raquel Santa Maria

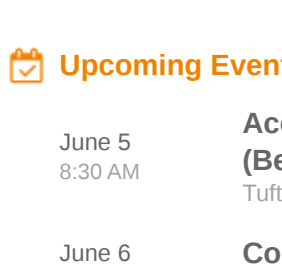
Wyss Institute



Seeing her own grandparents' health decline through the years, Technology Development Fellow Dr. Ana Raquel Santa Maria *(pictured)* was inspired to have a positive impact on patients and their loved ones. As soon as she could read, the whole world opened up for Ana. When she didn't know the answer to a question at school, she searched for it herself, always wanting to know more. "I think that's the beginning of a scientist there," she reflects. [Read More](#)

## Aric Lu on Breaking Biology by Bioprinting Complex Tissue

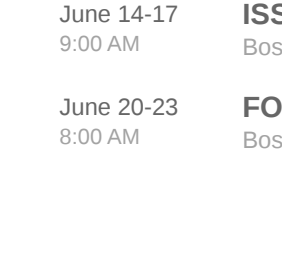
Wyss Institute



Like each cell in the body, each paddler in a dragon boat plays a specific role. In both cases, each has different characteristics and strengths, but all must work together in tandem for the boat, or the body, to function. Aric Lu *(pictured)* knows all of this from firsthand experience. Not only does he enjoy racing dragon boats in his spare time, at the Wyss he is using genetic engineering and bioprinting to form complex tissues made up of the large variety of cells found in humans. [Read More](#)

## A Potential New Weapon in the War Against Superbugs

Brigham and Women's Hospital



Without antibiotics to manage common bacterial infections, small injuries and minor infections become potentially fatal encounters. In 2019, more than 2.8 million antimicrobial-resistant infections occurred in the United States, and more than 35,000 people died as a result, according to the Centers for Disease Control and Prevention. In the same year, about 1.25 million people died globally. [Read More](#)

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### Upcoming Events in Boston

June 5  
8:30 AM  
**Accelerate Access to EU Market: Biotech Valley in Wallonia (Belgium)**  
Tufts Launchpad BioLabs

June 6  
6:30 PM  
**Community Concert at BIO**  
Big Night Live

June 13  
7:00 PM  
**Public Symposium: Stem Cells at the Planetarium**  
Museum of Science

June 14-17  
9:00 AM  
**ISSCR 2023**  
Boston Convention and Exhibition Center (BCEC)

June 20-23  
8:00 AM  
**FOCIS 2023**  
Boston Marriott Copley Place

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### Other Science Jobs in Boston

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Biogen

**Senior Research Associate, Screening and Automation Engineering**

Editas Medicine

**Cancer Model Scientist, CCLF**

Broad Institute

**Principal Scientist, Epigenetics, Immune Therapeutics Discovery**

Moderna

**Program Manager, Army Center for Synthetic Biology**

MIT

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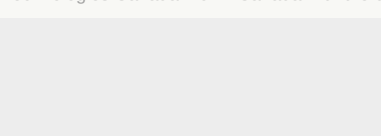
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