



Publications of the Week

An Expanded Registry of Candidate Cis-Regulatory Elements

First Author: Jill Moore (*pictured, left*) | Senior Author: Zhiping Weng (*right*)
Nature | UMass Chan Medical School and the Broad Institute



Previously, the ENCODE consortium mapped biochemical signals across hundreds of cell types and tissues and integrated these data to develop a registry containing 0.9 million human and 300,000 mouse candidate cis-regulatory elements (cCREs) annotated with potential functions. Here, researchers have expanded the registry to include 2.37 million human and 967,000 mouse cCREs, leveraging new ENCODE datasets and enhanced computational methods. [Abstract](#) | [Press Release](#)

Intelectin-2 Is a Broad-Spectrum Antimicrobial Lectin

First Authors: Amanda Dugan and Deepsing Syangtan | Senior Author: Laura Kiessling (*pictured*)
Nature Communications | The Broad Institute and MIT



Lectins residing at colonization sites influence microbial populations, but their functional roles are often unclear. Intelectins are found in chordates at mucosal barriers, but their functions are not well characterized. In this study, researchers found that mouse intelectin-2 and human intelectin-2 engage and crosslink mucins via carbohydrate recognition. [Abstract](#) | [Press Release](#)

In Vivo Detection of Immune Responses via Cytokine Activity Labeling

First Author: Guangqing Lu | Senior Author: Jun Huh (*pictured*)
Cell | Blavatnik Institute, Harvard Medical School, Picower Institute, and MIT



While much is known about the identity and regulation of cytokine-producing cells, the cell types that respond to cytokines remain largely uncharacterized. To address this knowledge gap, researchers developed CyCLoPs (cytokine cellular locating platforms), a reporter system that translates cytokine receptor engagement into a genetically traceable signal. [Abstract](#)

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Awards

Ragon Institute Researcher Sophia Liu Awarded \$750K Grant from Massachusetts Life Sciences Center to Build Immune Response Map for Antigen Prediction

Ragon Institute



Dr. Sophia Liu (*pictured*), an Early Independence Fellow and Core Faculty Member at the Ragon Institute, has been awarded \$749,760 through the Massachusetts Life Sciences Center Bits to Bytes program. The funding will support Dr. Liu's project that aims to create a quantitative dataset capturing how the immune system responds to antigens in tissues. [Read More](#)

Wyss Institute-Led Collaboration to Engineer Off-the-Shelf, Universal, Transplant-Ready Graft for Liver Failure

Wyss Institute



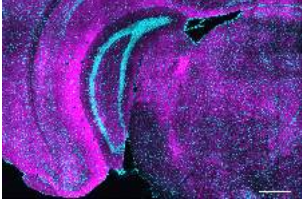
A new project, led by Dr. Christopher Chen (*pictured*), will leverage cutting-edge technologies to install synthetic biology-based gene circuits in human induced pluripotent stem cells that can drive cell differentiation into all required cell types of the liver. Those cells will then be immunoengineered to enable them to evade immune rejection in patients and be used to produce vascularized, functional tissue constructs. [Read More](#)

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Local News

How a Unique Class of Neurons May Set the Table for Brain Development

The Picower Institute



The way the brain develops can shape us throughout our lives, so neuroscientists are intensely curious about how it happens. A new MIT study finds that somatostatin-expressing neurons follow a unique trajectory when forming connections in the brain's visual cortex that may help establish the conditions needed for sensory experience to refine circuits. [Read More](#)

Study Finds Alpha-2 Receptor Drugs Reduce Heavy Alcohol Drinking

Boston University Chobanian & Avedisian School of Medicine



Alcohol use is widespread and alcohol use disorder causes substantial harm. Researchers led by Drs. Pietro Cottone (*pictured, right*) and Valentina Sabino (*left*) at Boston University report for the first time that guanfacine, a selective alpha-2 adrenergic drug already used clinically, can reduce heavy alcohol consumption and improve certain alcohol-related cognitive deficits in an experimental model. [Read More](#)

A CRISPR Fingerprint of Pathogenic *C. auris* Fungi

Wyss Institute



Infection with the pathogenic yeast fungus *Candida auris* can wreak havoc on the health of hospital patients and residents of nursing homes. A new study from Dr. Justin Rolando (*pictured*) demonstrates a precision diagnostic approach that, for the first time, enables fast and accurate quantification of *C. auris* strains from easily obtained swab samples. [Read More](#)

Cancer's Secret Safety Net

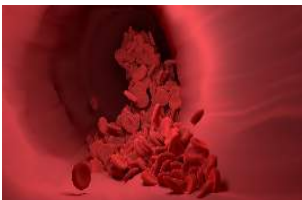
MIT Chemistry



Dr. Matthew Shoulders' (*pictured*) lab has uncovered a sinister hidden mechanism that can allow cancer cells to survive (and, in some cases, thrive) even when hit with powerful drugs. The secret lies in a cellular "safety net" that gives cancer the freedom to develop aggressive mutations. This fascinating intersection between molecular biology and evolutionary dynamics focuses on the most famous anti-cancer gene in the human body, TP53. [Read More](#)

Blood Test Predicts Which Patients with Lung Cancer Will Benefit from Newly Approved Immunotherapy Drug

Mass General Brigham



A team led by investigators at the Mass General Brigham Cancer Institute has discovered that a particular marker on tumor cells circulating in the blood indicates whether a patient with lung cancer will experience a lasting response to a newly approved immunotherapy called tarlatamab. The findings could allow clinicians to easily and noninvasively determine which patients should receive the drug. [Read More](#)

Language Processing Beyond the Neocortex

McGovern Institute



The ability to use language to communicate is one of the things that makes us human. At MIT's McGovern Institute, scientists led by Dr. Evelina Fedorenko (*pictured*) have defined an entire network of areas within the brain dedicated to this ability, which work together when we speak, listen, read, write, or sign. Now, Dr. Fedorenko's lab has identified language-processing regions within the cerebellum. [Read More](#)

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Upcoming Events in Boston

February 19 7:00 PM	Ending HIV: The Journey to a Vaccine Museum of Science
February 25 1:30 PM	11th Annual Rare Disease Day Event Broad Institute
February 26 7:00 PM	The Collective Cure: Upstream Solutions for Better Public Health Museum of Science
February 28 1:00 PM	SpaceTime TeaTime MIT Museum
March 18 - 19 8:00 AM	OPT Congress 2026 Seaport Hotel Boston

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