

**Publications of the Week**

### 16p11.2 Deletion Is Associated with Hyperactivation of Human iPSC-Derived Dopaminergic Neuron Networks and Is Rescued by RHOA Inhibition *In Vitro*

First Author: Maria Sundberg | Senior Author: Mustafa Sahin *(pictured)*  
 Nature Communications | Boston Children's Hospital, Harvard Medical School, MIT, Massachusetts General Hospital, Broad Institute, Harvard Stem Cell Institute, and Blavatnik Institute



Reciprocal copy number variations of 16p11.2 are associated with a wide spectrum of neuropsychiatric and neurodevelopmental disorders. The authors show that 16p11.2 deletion iPSC-derived dopaminergic (DA) neurons have increased soma size and synaptic marker expression compared to isogenic control lines, while 16p11.2 duplication iPSC-derived DA neurons show deficits in neuronal differentiation and reduced synaptic marker expression. [Abstract](#)

### NHR-49/PPAR- $\alpha$ and HLH-30/TFEB Cooperate for *C. elegans* Host Defense via a Flavin-Containing Monooxygenase

First Author: Khurseed Wani | Senior Author: Javier Irazoqui *(pictured)*  
 eLife | University of Massachusetts Medical School



Direct comparison of *C. elegans* that were starved or infected with *Staphylococcus aureus* revealed a large infection-specific transcriptional signature, which was almost completely abrogated by deletion of transcription factor *hlh-30/TFEB*, except for six genes including a flavin-containing monooxygenase (FMO) gene, *fmo-2/FMO5*. [Abstract](#)

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**Local News**

### Researchers Discover Oligodendrocyte Loss and Subtype Alteration in CTE Brains

Boston University School of Medicine



While many of the scientific studies to date have focused on repetitive head trauma leading to the development of abnormal tau, a new study provides insights into white matter changes that may offer new targets for therapies. "There is loss of oligodendrocytes and alteration of oligodendrocyte subtypes in chronic traumatic encephalopathy (CTE) that might provide new targets for prevention and therapies," said corresponding author Dr. Ann McKee *(pictured)*. [Read More](#)

### Aging Matters

The Harvard Gazette



As a master's student studying biology at the Tata Institute of Fundamental Research in Mumbai, India, Sneha Dutta, *(pictured)* came across research in one of her classes that fascinated her. Authored by Harvard T.H. Chan School of Public Health's Dr. William Mair, it demonstrated that regulating a metabolic pathway in the brain could change the way we age. For a whole host of diseases, the biggest risk factor was simply getting older. [Read More](#)

### Haiqing Bai on Understanding and Treating Influenza

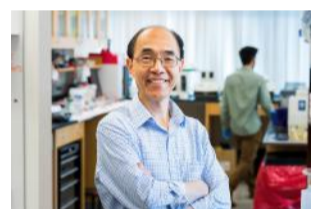
Wyss Institute



Dr. Haiqing Bai *(pictured)* is motivated by his curiosity and desire to answer scientific questions. This inquisitive spirit led to the serendipitous, accidental discovery of a broad-spectrum RNA therapeutic that could be used against viruses like influenza and SARS-CoV-2. Learn more about Dr. Bai and his work in this month's *Humans of the Wyss*. [Read More](#)

### McGovern Lab Develops New Technique for Correcting Disease-Causing Mutations

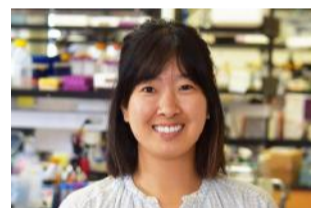
McGovern Institute



Gene editing, or purposefully changing a gene's DNA sequence, is a powerful tool for studying how mutations cause disease, and for making changes in an individual's DNA for therapeutic purposes. A novel method of gene editing that can be used for both purposes has now been developed by a team led by Dr. Guoping Feng, *(pictured)*, the James W. (1963) and Patricia T. Poitras Professor in Brain and Cognitive Sciences at MIT. [Read More](#)

### From a Small Island to a Cutting-Edge Lab

Tufts University



As a first-generation college student from the small island of Guam in the western Pacific, Noell Cho *(pictured)* was well into her undergraduate degree before she realized that a career in research was even a possibility. "In high school, a scientific career or a PhD in research wasn't really talked about," Cho says. Guam, which has a population of around 167,000, didn't have any large research institutes to offer a glimpse of such careers. [Read More](#)

### There's a Symphony in the Antibody Protein the Body Makes to Neutralize the Coronavirus

MIT News



The body produces antibody proteins that latch onto the proteins of viruses to neutralize them. This spring, MIT Professor Dr. Markus Buehler *(pictured)* translated the structure of the coronavirus antibody protein into a piece of music performed by the Lindenbaum Festival Orchestra in South Korea. "It's a hopeful piece as we enter this new phase in the pandemic," says Dr. Buehler. [Read More](#)

### Why RNA Research Has Been Critical during the COVID-19 Pandemic

Whitehead Institute



The human genome — and that of most other living organisms — is encoded in DNA. But not all living things use DNA as the template for their bodies. "The top 12 deadliest viruses, as classified by the World Health Organization, are all RNA viruses," says Whitehead Fellow Dr. Silvi Rouskin *(pictured)*. "That just means that they store their genomes as RNA instead of DNA." [Read More](#)

### The Proteins That Package DNA to Fit Inside Cells Have Another Role: Tuning Gene Expression

MIT Biology



Several years ago, Dr. Laurie Boyer's *(pictured)* lab at MIT was the first to show that H2A.Z wraps the DNA located around the start sites of most genes, where the molecular machine RNA polymerase II binds to copy the DNA into RNA. Dr. Boyer's team demonstrated that removing H2A.Z prevented embryonic cells from turning on genes that are important for forming organs and tissues. But scientists still weren't sure how H2A.Z exerted its effects. [Read More](#)

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### Upcoming Events in Boston

- June 3  
12:00 PM  
Online

**AI and the Future of Breast Cancer Detection and Risk Prediction**
- June 3  
1:30 PM  
Online

**Defining the Role of Wound-Induced Senescence in Wound Healing**
- June 4  
1:00 PM  
Online

**Renal Grand Rounds, Co-Hosted by the Fibrosis ARC**
- June 8  
1:00 PM  
Online

**Frontiers in Biostatistics: The Use of External Control Data for Predictions and Interim Analyses in Clinical Trials**
- June 9  
7:00 PM  
Online

**Biotechnology and the Future of Medicine**

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### Science Jobs in Boston

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- Research Associate I/II, Immunology (Macrophage)**  
BlueRock Therapeutics
- Scientist**  
Harvard University
- Research Technician**  
Massachusetts General Hospital
- In Vivo Senior Research Associate II**  
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**Webinar: Modeling Alzheimer's Risk Using iPSC-Derived Microglia**

By Amanda McQuade WATCH NOW

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