Volume 3.00: January 11, 2021

Publications of the Week

In Vivo Base Editing Rescues Hutchinson–Gilford Progeria Syndrome in Mice

First Author: Luke Koblan | Senior Author: David Liu *(pictured)*
Nature | Broad Institute and Harvard

The authors describe the use of an adenine base editor (ABE) to directly correct the pathogenic Hutchinson–Gilford progeria syndrome (HGPS) mutation in cultured fibroblasts derived from children with progeria and in a mouse model of HGPS. Lentiviral delivery of the ABE to fibroblasts from children with HGPS resulted in 87–91% correction of the pathogenic allele, mitigation of RNA mis-splicing, reduced levels of progerin and correction of nuclear abnormalities. **Abstract | Press Release**

Motif-Driven Interactions between RNA and PRC2 Are Rheostats that Regulate Transcription Elongation

First Author: Michael Rosenberg | Senior Author: Jeannie Lee *(pictured)*
Nature Structural & Molecular Biology | Massachusetts General Hospital and Harvard Medical School

Although polycomb repressive complex 2 (PRC2) is now recognized as an RNA-binding complex, the full range of binding motifs and why PRC2–RNA complexes often associate with active genes have not been elucidated. The authors identify high-affinity RNA motifs whose mutations weaken PRC2 binding and attenuate its repressive function in mouse embryonic stem cells. **Abstract | Press Release**

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Awards

Three Harvard Scholars Awarded Aramont Fund Fellowships

The Harvard Gazette

The Office of the Vice Provost for Research at Harvard University has announced the third cohort of fellows to receive support from the Aramont Fund for Emerging Science Research. The Fund provides fellowships for exceptional early-career scholars. The three new fellows are Dr. Sophie Helaine *(pictured)*, Dr. Suyang Xu, and Dr. Oluwaseun Araromi. **Read More**

Two MIT Brain and Cognitive Sciences Faculty Members Earn Funding from the G. Harold and Leila Y. Mathers Foundation

McGovern Institute

Two MIT neuroscientists have received grants from the G. Harold and Leila Y. Mathers Foundation to screen for genes that could help brain cells withstand Parkinson's disease and to map how gene expression changes in the brain in response to drugs of abuse. Dr. Myriam Heiman *(pictured, right)* and Dr. Alan Jasanoff *(left)* each received three-year awards. **Read More**

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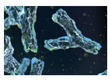
Local News

Three Studies Examine Coronavirus, Antibodies during Pregnancy

Harvard Medical School



Pregnant women infected with SARS-CoV-2 appear to be at higher risk of developing severe cases of COVID-19 than infected women who are not pregnant. Yet newborns are mostly doing well. Three new studies from Harvard Medical School researchers at Massachusetts General Hospital and Boston Children's Hospital provide insight into what may be happening. **Read More**

Sequencing Inside Cells

McGovern Institute

By bringing DNA sequencing out of the sequencer and directly to cells, MIT scientists have revealed an entirely new view of the genome. With a new method for *in situ* genome sequencing reported in the journal *Science*, researchers can, for the first time, see exactly how DNA sequences are organized and packed inside cells. **Read More**

Nanoparticle Drug-Delivery System Developed to Treat Brain Disorders

Brigham and Women's Hospital via EurekAlert

To facilitate successful delivery of therapeutic agents to the brain, a team of bioengineers, physicians, and collaborators at Brigham and Women's Hospital and Boston Children's Hospital have created a nanoparticle platform that can facilitate therapeutically effective delivery of encapsulated agents in mice with a physically breached or intact blood-brain barrier. **Read More**

Helping Scientists Succeed: A Conversation with MIT's New School of Science Dean

Slice of MIT

In September, Dr. Nergis Mavalvala *(pictured)* became the first woman to serve as Dean of MIT's School of Science, succeeding Donner Professor of Mathematics Michael Sipser. Born and raised in Pakistan, Mavalvala first got to know MIT during her undergraduate years at nearby Wellesley College. After earning her PhD at the Institute in 1997, she joined the faculty in 2002. The MIT Alumni Association spoke with Mavalvala this fall as she settled into the role. **Read More**

Turning Microbiome Research into a Force for Health

MIT News

A diverse group of researchers is working to turn new discoveries about the trillions of microbes in the body into treatments for a range of diseases. "In almost every disease context that's been investigated, we've found different types of microbial communities, divergent between healthy and sick patients," says MIT Professor of Biological Engineering Dr. Eric Alm. **Read More**

Scientists Create On-Off Switches to Control CAR T Cell Activity

Dana-Farber

Scientists at Dana-Farber Cancer Institute and Massachusetts General Cancer Center have created molecular ON-OFF switches to regulate the activity of CAR T cells, a potent form of cell-based immunotherapy that has had dramatic success in treating some advanced cancers, but which pose a significant risk of toxic side effects. **Read More**

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Upcoming Events in Boston

January 12 7:00 AM	**HOPE Physicians Conference with Dr. Boris Juelg "Update on COVID-19 Vaccines"** Online
January 12 1:00 PM	**Cultivating Strong Career Mentors during Your PhD and Postdoc** Online
January 12 4:00 PM	**Immunity from Principles to Practice: Neutralilzing Antibodies against Pandemic Viruses** Online
January 14 2:00 PM	**Skills in Science: Rethinking Scientific Training** Online
January 25 - 29 8:00 AM	**MassBio Partnering Week** Online

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Science Jobs in Boston

Senior Scientist, Bioassay and Molecular Analytical Development, GMU
Sanofi

Scientist/Sr. Scientist – Protein Engineer/Biologist, Tissue Targeting
Novartis

Scientist, Vascular Biology
Satellite Biosciences

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Harvard University Department of Stem Cell and Regenerative Biology

Research Associate I, Cardiovascular Disease Initiative
Broad Institute

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