Volume 5.08: March 6, 2023

Publications of the Week

A NPAS4–NuA4 Complex Couples Synaptic Activity to DNA Repair

First Authors: Elizabeth Pollina and Daniel Gilliam | Senior Author: Michael Greenberg *(pictured)*
Nature | Harvard Medical School

Neuronal activity is crucial for adaptive circuit remodeling but poses an inherent risk to the stability of the genome across the long lifespan of postmitotic neurons. The authors identify an activity-dependent DNA repair mechanism in which a new form of the NuA4–TIP60 chromatin modifier assembles in activated neurons around the inducible, neuronal-specific transcription factor NPAS4. **Abstract | Press Release**

Immunogenicity and Protective Efficacy of GBP510/AS03 Vaccine Against SARS-CoV-2 Delta Challenge in Rhesus Macaques

First Authors: Catherine Jacob-Dolan, Jingyou Yu, Katherine McMahan, Victoria Giffin, and Abishek Chandrashekar | Senior Author: Dan Barouch *(pictured)*
npj Vaccines | Beth Israel Deaconess Medical Center, Ragon institute, and Harvard Medical School

Despite the availability of several effective SARS-CoV-2 vaccines, additional vaccines will be required for optimal global vaccination. The authors investigate the immunogenicity and protective efficacy of the GBP510 protein subunit vaccine adjuvanted with AS03, which has recently been authorized for marketing in South Korea under the trade name SKYCovione™. **Abstract**

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Awards

Molecular Biologists Allan Jacobson and Lynne Maquat Receive 2023 Gruber Genetics Prize

UMass Chan Medical School

The 2023 Gruber Genetics Prize is being awarded to molecular biologists Dr. Allan Jacobson *(pictured)* of UMass Chan Medical School and Dr. Lynne Maquat of the University of Rochester School of Medicine and Dentistry for their contributions in identifying and describing the mechanism of nonsense-mediated mRNA decay. **Read More**

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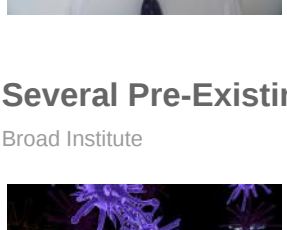
Local News

New Purification Method Could Make Protein Drugs Cheaper

MIT News



One of the most expensive steps in manufacturing protein drugs such as antibodies or insulin is the purification step: isolating the protein from the bioreactor used to produce it. In an effort to help reduce those costs, MIT engineers have devised a new way to perform this kind of purification. “This work uses bioconjugate-functionalized nanoparticles to act as templates for enhancing protein crystal formation at low concentrations,” says Dr. Kripa Varanasi *(pictured)*. **Read More**

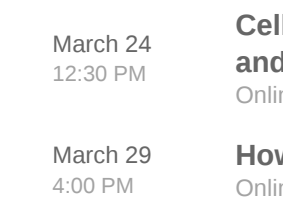
BU Researchers Join $100 Million Effort to Fight Future Deadly Pathogens

The Brink

As we slowly exit the current COVID-19 pandemic, BU researchers are joining a $100 million effort to advance our understanding of dangerous pathogens — and help spur new ways to defeat or at least contain them. Dr. Elke Mühlberger *(pictured, right)* is teaming up with BU scientists Drs. Daniel Cifuentes, Anthony Griffiths, and Gustavo Mostoslavsky *(left)* to focus on “merging the technologies of RNA biology and enhanced biosafety to create next generation broad spectrum RNA-based antiviral therapies." **Read More**

Researchers Bioengineer an Endocrine Pancreas for Type 1 Diabetes

Massachusetts General Hospital



Transplanting donor islet tissue to a bioengineered omentum — the fatty tissue that drapes from the stomach over the intestines — normalized blood glucose levels in nonhuman primates with type 1 diabetes. These findings reveal a promising alternative strategy for islet transplantation when treating type 1 diabetes, particularly in the field of stem cell–based therapy. **Read More**

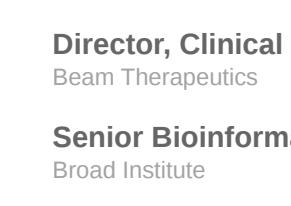
Immune & Inflamed

The Picower Institute

When Associate Professor Dr. Myriam Heiman *(pictured)* began studying neuroscience as a postdoc, scientists interested in neurodegenerative diseases had long reported evidence of inflammation, or the activation of immune responses, but few were claiming it was an early driver of disease. “It was initially thought it might be perhaps more of a secondary response to neural damage,” Dr. Heiman said. **Read More**

Meet a Whitehead Postdoc: Jesse Platt

Whitehead Institute



Dr. Jesse Platt *(pictured)* is a postdoc in Whitehead Institute member Dr. Richard Young’s lab studying mechanisms of insulin resistance. He is also a practicing gastroenterologist and hepatologist. He studies how the insulin receptor functions in insulin sensitive cells, and how it becomes dysfunctional in insulin resistant cells. **Read More**

Several Pre-Existing RSV Lineages Powered the 2022 Surge

Broad Institute

Late last year, thousands of children across the United States were hospitalized with respiratory syncytial virus (RSV), but unlike previous RSV surges, this one affected a larger number of people and a broader range of age groups, including older children. As cases climbed faster and earlier in the season than in previous years, researchers wondered whether a fast-spreading RSV variant might be driving this unusual pattern of cases. **Read More**

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Upcoming Events in Boston

March 8
12:00 PM
Clarifying the Mysteries of Choosing Statistical and Machine-Learning Methods in Genomics Research
Online

March 14
4:00 PM
Soma Weiss Student Research Day
TMEC Atrium

March 24
12:30 PM
Cell Therapies for Parkinson’s Disease: How Far Have We Come, and Where Are We Going?
Online

March 29
4:00 PM
How Small RNAs Regulate Genes – And Could Treat Disease
Online

April 26
12:00 PM
Is It Possible to Bioprint Human Hearts?
Online

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Senior Program Associate, Science in the City
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