

Publications of the Week

Modeling Epigenetic Lesions That Cause Gliomas

First Author: Gilbert Rahme | Senior Author: Bradley Bernstein *(pictured)*
Cell | Dana-Farber, Harvard Medical School, MIT, and the Broad Institute



The authors model aberrations arising in isocitrate dehydrogenase-mutant gliomas, which exhibit DNA hypermethylation. They focus on a CCCTC-binding factor insulator near the *PDGFRA* oncogene that is recurrently disrupted by methylation in these tumors. The authors demonstrate that disruption of the syntenic insulator in mouse oligodendrocyte progenitor cells (OPCs) allows an OPC-specific enhancer to contact and induce *Pdgfra*, thereby increasing proliferation. [Abstract](#) | [Press Release](#)

NLRP11 Is a Pattern Recognition Receptor for Bacterial Lipopolysaccharide in the Cytosol of Human Macrophages

First Authors: Maricarmen Rojas-Lopez, María Luisa Gil-Marqués, Vritti Kharbanda, Amanda Zajac, Kelly Miller, and Thomas Wood | Senior Author: Marcia Goldberg *(pictured)*
Science Immunology | Massachusetts General Hospital, Harvard University, and the Broad Institute



The authors show that the primate-specific protein NLRP11 is a pattern recognition receptor for cytosolic lipopolysaccharide (LPS) that is required for efficient activation of the caspase-4 inflammasome in human macrophages. In human macrophages, NLRP11 is required for efficient activation of caspase-4 during infection with intracellular Gram-negative bacteria or upon electroporation of LPS. [Abstract](#) | [Press Release](#)

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Awards

NIH Funds MD/PhD Student's Research on Triple-Negative Breast Cancer

UMass Chan Medical School



Ayush Kumar *(pictured)* received a Ruth L. Kirschstein National Research Service Award from the National Cancer Institute to study triple-negative breast cancer. "A lot of patients have relapsed despite aggressive radiation therapy. Hopefully through this project, we can identify how we can incorporate newer therapies to prevent that from occurring further," Kumar said. [Read More](#)

2023 Blavatnik National Awards for Young Scientists Announced

Dana-Farber Cancer Institute



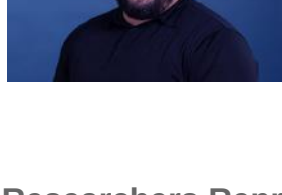
The Blavatnik Family Foundation and the New York Academy of Sciences announced the 2023 laureates of the Blavatnik National Awards for Young Scientists, the largest unrestricted scientific award for America's most innovative, faculty-ranked scientists and engineers who are under the age of 42. Two Dana-Farber faculty members are among the finalists: Dr. Cigall Kadoch *(pictured)* in the Life Sciences category, and Dr. Eric Fischer in the Chemistry category. [Read More](#)

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Local News

Perfecting the Craft of Modeling Disease in Stem Cells: Dosh Whye

Boston Children's Hospital



Dr. Dosh Whye *(pictured)* has always wanted to make peoples' lives better, but he never imagined that tending to stem cells in a lab seven days a week would be the way he would do it. Now, as an Assistant Director of the Human Neuron Core in the Rosamund Stone Zander Translational Neuroscience Center, Dr. Whye uses human stem cells to develop new models of neurological conditions that help researchers work towards treatments. [Read More](#)

Researchers Reprogram Gene Therapy Viral Vectors to Bind Specific Protein Targets

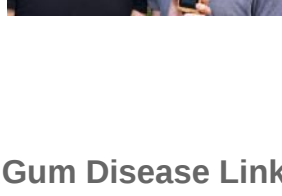
Broad Institute



A team of researchers led by Dr. Ben Deverman *(pictured)* built a more focused and efficient method of engineering adeno-associated viruses (AAVs). Previous methods introduce millions of AAV capsids into animals and rely on iterative rounds of screening to find AAVs that reach specific cells. The new approach instead looks for AAVs that bind to known proteins on the surface of target cells or organs. [Read More](#)

His Son Inspired Him to Invent a Bionic Pancreas

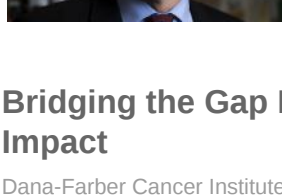
The Brink



When Dr. Ed Damiano's son, David *(pictured, right)*, was diagnosed with type 1 diabetes as an infant, he began to consider how he could use his expertise to spare his son, and others like him, a life of constant calculations — and worry. Almost 25 years later, Dr. Damiano *(left)* achieved that goal, and the fully automated bionic pancreas he coinvented has the potential to revolutionize type 1 diabetes management — and transform the lives of millions around the world. [Read More](#)

Gum Disease Linked to Buildup of Alzheimer's Plaque Formation

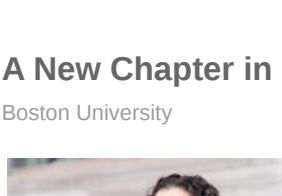
Forsyth



Forsyth scientists including Dr. Alpdogan Kantarci *(pictured)* and their collaborators at BU demonstrate that gum disease can lead to changes in brain cells called microglial cells, which are responsible for defending the brain from amyloid plaque. This plaque is a type of protein that is associated with cell death, and cognitive decline in people with Alzheimer's. [Read More](#)

Bridging the Gap Between Medical AI Research and Real-World Clinical Impact

Dana-Farber Cancer Institute



"To assess whether patients will benefit from new tools or algorithms deployed clinically at a large scale...we need to test the tools on large, diverse patient populations in different communities and medical settings. We hope this open benchmarking platform, and the collaborative international partnership underlying it, can help enable and democratize access to the many benefits of medical AI on the horizon," says Dr. Jason Johnson *(pictured)*. [Read More](#)

A New Chapter in Birth Control

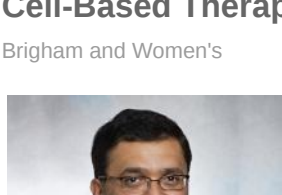
Boston University



The FDA's approval of the first over-the-counter birth control pill in the United States could be a revolutionary change in birth control and reproductive health, says Dr. Katharine O'Connell White *(pictured)*. "After a year during which there has been very little good news about people's reproductive health, this is the first solid win in a long time," she says. [Read More](#)

They Fell in Love with Each Other, Then with the Same Science

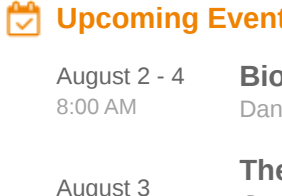
The Brink



As molecular biologists, Drs. Ruslan Afasizhev *(pictured, left)* and Inna Afasizheva *(right)* wanted to explore the complexity of living cells, dive into the latest research, and learn as much as possible. And then, in 1991, the Soviet Union collapsed. The Russian economy staggered into a new era — and investment in research tumbled. The newly married couple's scientific dreams were shattered by uncertainty. [Read More](#)

Brigham Researchers Reverse Chemotherapy-Related Fertility Loss Using Cell-Based Therapy

Brigham and Women's



A new study by Dr. Raymond Manohar Anchan *(pictured)* and investigators in a preclinical model demonstrates the potential for restoring fertility when the ovaries have stopped working. They found that adult stem cells could restore healthy hormone levels after chemotherapy and lead to natural conception resulting in the birth of live mice. Techniques based on the study could revolutionize fertility options for women with premature ovarian failure. [Read More](#)

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📅 Upcoming Events in Boston

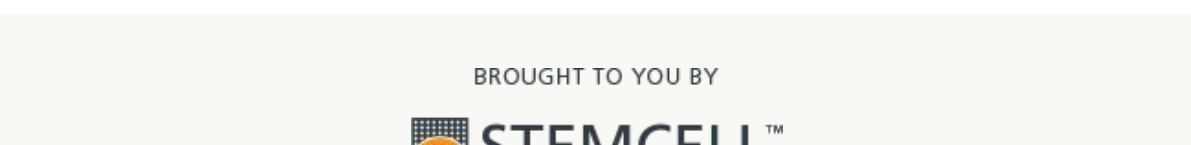
- August 2 - 4
8:00 AM **BioC2023: the Bioconductor Annual Conference**
Dana-Farber Cancer Institute & Online
- August 3
9:00 AM **The Annual Chemistry and Pharmacology of Drug Abuse Conference**
Sheraton Boston Hotel
- August 7
7:30 AM **Immuno-Oncology Summit 2023**
Seaport Hotel
- August 14 - 17
12:00 PM **The 15th Annual Bioprocessing Summit**
Hynes Convention Center
- August 28 - 29
8:00 AM **The mRNA Conference 2023**
DoubleTree by Hilton Hotel

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📄 Science Jobs in Boston

- Cell & Gene Therapy Specialist, North America**
STEMCELL Technologies
- Scientific Inside Sales Representative, Cell Culture**
STEMCELL Technologies
- Scientific Inside Sales Representative**
STEMCELL Technologies
- Staff Scientist, Air Pollution**
Health Effects Institute
- Research Assistant, Brain Organoid Engineering**
Harvard Medical School

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