

## Publications of the Week

## Inhibition of the Translesion Synthesis Polymerase REV1 Exploits Replication Gaps as a Cancer Vulnerability

First Author: Sumee Nayak (pictured, left) | Senior Author: Sharon Cantor (right)  
Science Advances | UMass Medical School



The replication stress response, which serves as an anticancer barrier, is activated not only by DNA damage and replication obstacles but also oncogenes, thus obscuring how cancer evolves. The authors have identified that oncogene expression, similar to other replication stress-inducing agents, induces single-stranded DNA gaps that reduce cell fitness. [Profile](#) | [Abstract](#)

## cGMP via PKG Activates 26S Proteasomes and Enhances Degradation of Proteins, Including Ones that Cause Neurodegenerative Diseases

First Author: Jordan VerPlank | Senior Author: Alfred Goldberg (pictured)  
PNAS | Blavatnik Institute at Harvard Medical School



The authors demonstrated that agents that raise cGMP and activate cGMP-dependent protein kinase stimulate proteasome activities and intracellular proteolysis without affecting autophagy. Furthermore, they showed that raising cGMP reduced the levels of the disease-causing mutant tau in a zebrafish model by increasing its degradation, and also decreased the associated morphological abnormalities. [Profile](#) | [Abstract](#)

[View All Publications](#)

## Awards

## Cigall Kadoch, PhD, to Receive 2020 AACR Award for Outstanding Achievement in Basic Cancer Research

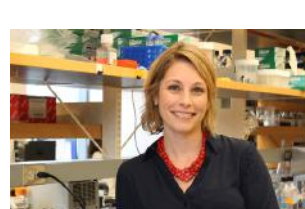
Dana-Farber



The American Association for Cancer Research (AACR) has honored Dr. Cigall Kadoch (pictured) with the 2020 AACR Award for Outstanding Achievement in Basic Cancer Research. Kadoch is an Assistant Professor of Pediatric Oncology at Dana-Farber, Assistant Professor of Pediatrics at Harvard Medical School, and an Institute member at MIT. [Read More](#)

## Dan and Diane Riccio Fund for Neuroscience Announces Four Grants

UMass Med Now



The Dan and Diane Riccio Fund for Neuroscience has announced four \$50,000 seed grants to UMass Medical School researchers Drs. Katherine Fitzgerald, Paul Greer, Andrei Korostelev, and Dorothy Schafer (pictured). The fund is intended to catalyze interdisciplinary collaborations, leading to innovative discoveries that deepen our understanding of brain function and the processes that go awry in neurological diseases. [Read More](#)

## Stefan G. Tullius, MD, PhD, Awarded \$2.5M National Institutes of Health Grant

Brigham and Women's Department of Surgery



Dr. Stefan Tullius (pictured) has been awarded a National Institutes of Health grant for his study "Senescent cells drive mt-DNA accumulation and inflamm-aging." This grant will delineate specific immune responses when transplanting older organs. Dr. Tullius and his group will test if the depletion of senescent cells through senolytics will improve transplant outcomes and modify immune responses. [Read More](#)

## Boston Researchers Are Finalists for Major Young Scientist Award

Blavatnik Awards for Young Scientists



Dr. Polina Anikeeva (pictured) from MIT, Dr. Sun Hur from Boston Children's Hospital, and Dr. Cigall Kadoch from Dana-Farber and Harvard are among thirty-one of the nation's rising stars in science that have been announced as the 2020 Finalists of the prestigious Blavatnik National Awards for Young Scientists, the world's largest unrestricted prize for early-career scientists. [Read More](#)

[View All Awards](#)

## Local News

## Study Reveals What Makes Brain Cancer Cells Resistant to Treatment

Massachusetts General Hospital



A team led by investigators at Massachusetts General Hospital has uncovered a mechanism used by glioblastoma cells to become aggressive and resistant to chemotherapy and radiation. The research draws on the knowledge that glioblastoma is not just one entity: different subtypes of glioblastoma cancer cells can be found in a single tumor, and sometimes a less aggressive subtype can transform into a more aggressive one. [Read More](#)

## Discovery of Key Steps in Kidney Development Offers New Clues About Improving Treatments for Chronic Kidney Disease

Massachusetts General Hospital



The discovery of how certain key structures in the kidneys are formed could have important implications for treating renal fibrosis (or scarring), a feature of chronic kidney disease (CKD), according to a new study by a researcher at Massachusetts General Hospital led by Dr. Alexander Marmenou (pictured). Interestingly, the research that led to these findings arose from a previous study on the genetic origins of a rare skin disorder. [Read More](#)

## Finch's Live Microbiome Drug Shows Promise in C. Diff Treatment

BioSpace



Finch Therapeutics has reported positive topline results from PRISM3, its Phase II trial of CP101, an oral microbiome drug for the prevention of recurrent *C. difficile* infection. *Clostridioides difficile* infection is a dangerous antibiotic-resistant bacterial infection. According to the U.S. Centers for Disease Control and Prevention, it is one of the most urgent antibiotic-resistant infections in the U.S. and most common healthcare-associated infections, particularly in nursing homes. [Read More](#)

## Tiny, Decoy "Sponges" Attract Coronavirus Away from Lung Cells

Boston University



Imagine if scientists could stop the coronavirus infection in its tracks simply by diverting its attention away from living lung cells? A new therapeutic countermeasure from Dr. Anna Honko (pictured) and colleagues from Boston University's National Emerging Infectious Diseases Laboratories appears to do just that. [Read More](#)

## Researchers Attempt New Treatment Approach for Blood Cancer

BU School of Medicine



In an effort to improve the survival of patients with myeloproliferative neoplasms, a type of leukemia, a team led by Dr. Katya Ravid (pictured) at Boston University inhibited a specific protein to decrease the number of large bone marrow cells in an experimental model. An increase in megakaryocyte numbers is thought to be the cause of many problems observed in this disease. This type of treatment approach has never been attempted before. [Read More](#)

## How Cells' 'Lava Lamp' Effect Could Make Cancer Drugs More Powerful

Nature News



There's a long-standing assumption in the pharmaceutical industry that when drug molecules enter a cell, they spread through it evenly — but, says biologist Rick Young (pictured), "that could not be further from the truth". In a new study, Young and his colleagues at the Whitehead Institute showed that cancer-drug compounds become concentrated in precise spots in cells, because of a phenomenon called phase separation by which all cells partition their contents. [Read More](#)

## GreenLight Biosciences Raises \$102M in Series D to Bring RNA Products to 'Patients and Farmers Alike'

BostInno



With a renewed focus on bringing sustainable biopesticides and a coronavirus vaccine to market, GreenLight Biosciences, the rapidly growing agtech and life sciences firm based in Medford, has brought in a whopping \$102 million in Series D funding. The basis of GreenLight's technology — targeting pests using RNA, thereby leaving the environment around them undisturbed — can also apply to life sciences. [Read More](#)

## Wyss Institute to Accelerate Drug Testing for COVID Treatment

The Harvard Gazette



The Wyss Institute and the U.S. Defense Advanced Research Projects Agency (DARPA) have signed an agreement worth up to \$16 million over the next year to use Wyss technologies to identify and test FDA-approved drugs that could be repurposed to prevent or treat COVID-19. Specifically, DARPA will use the computational drug-discovery pipelines and human organ chip technologies developed by the Wyss Institute. [Read More](#)

## Biomarker Test Highly Accurate in Detecting Early Kidney Cancer

Dana-Farber



A novel liquid biopsy method can detect kidney cancers with high accuracy, including small, localized tumors which are often curable but for which no early detection method exists, say scientists from Dana-Farber. The report from Dr. Pier Vitale Nuzzo (pictured) and colleagues suggests that if validated in larger trials and applied widely, the non-invasive test could find more early kidney cancers when they haven't spread, thus reducing the mortality of the disease. [Read More](#)

## Novel Therapeutic, Based on UMMS Microbiome Discoveries and Licensed by Bacainn Therapeutics, Targets Ulcerative Colitis

UMass Medical School



Biologics to modulate the migration and activation of specific innate immune cells, called neutrophils, discovered in the lab of Dr. Beth McCormick (pictured) at UMass Medical School, have been licensed by Bacainn Therapeutics to develop treatments for various acute medical conditions, including ulcerative colitis. The Massachusetts company has received FDA clearance for a Phase I clinical trial of its compound to address uncontrolled inflammation in the gut. [Read More](#)

## New Drug Pathway Linked with Tuberous Sclerosis

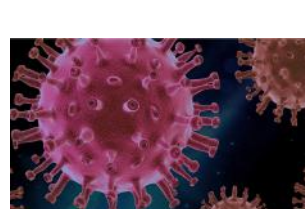
Boston Children's Hospital



Tuberous sclerosis complex (TSC) is a neurological disorder causing non-cancerous tumors, called cortical tubers, to grow throughout the brain and body, as well as other conditions like epilepsy and autism. Dr. Alesia Di Nardo (pictured) and the laboratory of Dr. Mustafa Sahin has discovered that a cell signaling pathway called the heat shock protein cascade may offer new drugs for TSC. [Read More](#)

## Experimental Peptide Targets COVID-19

MIT News



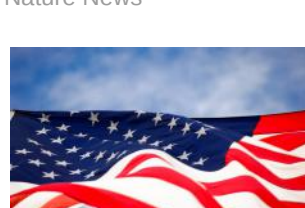
Using computational models of protein interactions, researchers at the MIT Media Lab and Center for Bits and Atoms have designed a peptide that can bind to coronavirus proteins and shuttle them into a cellular pathway that breaks them down. This type of peptide could hold potential as a treatment that would prevent the SARS-CoV-2 virus from reproducing itself within infected cells, the researchers say. [Read More](#)

[View All Local News](#) | [Submit an Article](#)

## Interesting Articles

## Trump to Suspend New Visas for Foreign Scholars

Nature News



With a new proclamation issued, US President Donald Trump extended and expanded immigration restrictions to limit the entry of foreign workers to the United States. The move set off ripples of alarm among scientists and drew fire from experts concerned about the future of US science. According to the order, the United States will stop issuing certain categories of foreign-worker visas until the end of the year. [Read More](#)

[View All Interesting Articles](#) | [Submit an Article](#)

## Upcoming Events in Boston

June 30

10:00 AM

**Life After the PhD Virtual Series: How to Prepare to Be Competitive for a Scientist Position in Industry**

Online

June 30

1:00 PM

**The State of the Pharmaceutical Industry, Featuring Pharamlot's Ed Silverman**

Online

July 2

12:00 PM

**Topics in Bioengineering: Dr. Samantha Morris**

Online

July 8

12:00 PM

**BrainMap: Making Sense of Time in the Human Mind**

Online

July 9

12:00 PM

**Topics in Bioengineering: Dr. Raphael Levy**

Topics in Bioengineering: Dr. Raphael Levy

[View All Events](#) | [Submit an Event](#)

## Science Jobs in Boston

**Research Scientist I, Pharmacology, High Content Imaging**

Broad Institute

**Research Scientist**

MIT Picower Institute for Learning & Memory

**Head, Scientific Products**

Novartis

**Associate Scientist, Drug Metabolism & Pharmacokinetics**

Enanta Pharmaceuticals

**Postdoctoral Fellow, Stem Cell Biology and Organogenesis**

Harvard Stem Cell Institute

[View 86 Other Science Jobs](#) | [Submit a Job](#)

**Virtual Exhibit: Pluripotent Stem Cells**  
See scientific talks and posters from your device



**STEMCELL**  
TECHNOLOGIES

[EXPLORE NOW](#)

Submit your articles and events by reaching out to us at [info@scienceinboston.com](mailto:info@scienceinboston.com).

BROUGHT TO YOU BY



**STEMCELL Technologies**  
Products | Services

**STEMCELL's Science Newsletters**  
Free Weekly Updates on Your Field

**The Stem Cell Podcast**  
Interviews and Updates on Stem Cell Science