

**Publications of the Week**
**PAR2 Promotes Impaired Glucose Uptake and Insulin Resistance in NAFLD Through GLUT2 and Akt Interference**

 First Author: Andrew Shearer | Senior Author: Athan Kuliopulos (pictured)  
 Hepatology | Tufts University


Insulin resistance and poor glycemic control are key drivers of the development of non-alcoholic fatty liver disease (NAFLD) and have recently been shown to be associated with fibrosis progression in nonalcoholic steatohepatitis (NASH). The authors set out to determine whether PAR2, a sensor of extracellular inflammatory and coagulation proteases, links NAFLD and NASH with liver glucose metabolism.

[Abstract](#)
**Intracellular Sensing of DNA in Autoinflammation and Autoimmunity**

 First Author: Susan MacLaughlan | Senior Author: Ellen Gravallesse (pictured)  
 Arthritis & Rheumatology | Brigham and Women's Hospital and UMass Chan Medical School


DNA has emerged as a pathogen associated molecular pattern, posing unique challenges in the discrimination between endogenous (self) and foreign DNA. This challenge is highlighted by certain autoinflammatory diseases that arise from monogenic mutations and result in periodic flares of inflammation, typically in the absence of autoantibodies or antigen-specific T lymphocytes. [Abstract](#)

[View All Publications](#)
**Awards**
**New Grant Funds Research at Dana-Farber to Advance Diagnosis of Inflammatory Breast Cancer**

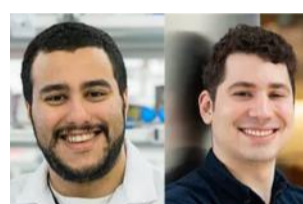
Dana-Farber Cancer Institute



Susan G. Komen, the world's leading breast cancer organization, awarded a research grant to apply a new, first-of-its-kind tool that seeks to more accurately diagnose inflammatory breast cancer. The grant funds collaborative work being done by Dr. Filipa Lynce (pictured) at Dana-Farber and Dr. Wendy Woodward at the University of Texas MD Anderson Cancer Center. [Read More](#)

[View All Awards](#)
**Local News**
**Convenience-Sized RNA Editing**

McGovern Institute



Last year, Drs. Omar Abudayyeh (pictured, left) and Jonathan Gootenberg (right) at MIT's McGovern Institute discovered and characterized Cas7-11, the first CRISPR enzyme capable of making precise, guided cuts to strands of RNA without harming cells in the process. Now, working with collaborators at the University of Tokyo, the same team has revealed that Cas7-11 can be shrunk to a more compact version, making it an even more viable option for editing the RNA inside living cells.

[Read More](#)
**New Gels Could Help the Medicine Go Down**

MIT News



For most children and even some adults, swallowing pills or tablets is difficult. To make it easier to give those medicines, researchers in Dr. Giovanni Traverso's (pictured) lab at MIT and Brigham and Women's Hospital have created a drug-delivering gel that is much easier to swallow and could be used to administer a variety of different kinds of drugs. [Read More](#)

**Fetal Brain Imaging Predicts Neurodevelopment of Babies with Congenital Heart Disease**

Boston Children's Hospital



Children with congenital heart disease often have neurodevelopmental impairment. Until fairly recently, this was thought to stem from complications of cardiac surgery or reduced oxygen supply to the brain due to the heart defect. "A lot of brain development occurs during the fetal period that can influence a baby's future trajectory," says study leader Dr. Caitlin Rollins (pictured). [Read More](#)

**A Heart-Racing Deadline for a Heartfelt Collaboration**

MIT Biology



During MIT's Independent Activities Period in January 2022, several members of the Boyer lab were hard at work — among them, Aniket Dehadrai (pictured, left) Brindha Rathinasabapathi (right), Dr. Vera Koledova, Kirsten Schneider, and Caroline Zhang. They had a hard deadline at the end of the month to finish the project: studying how the absence of a certain protein affects the growth of cardiomyocytes, the cells responsible for pumping blood around the heart.

[Read More](#)
**MIT Engineers Boost Signals from Fluorescent Sensors**

MIT News



Fluorescent sensors, which can be used to label and image a wide variety of molecules, offer a unique glimpse inside living cells. However, they typically can only be used in cells grown in a lab dish or in tissues close to the surface of the body, because their signal is lost when they are implanted too deeply. Engineers in Dr. Michael Strano's (pictured) group have now come up with a way to overcome that limitation. [Read More](#)

**Engineers Develop Nanoparticles That Cross the Blood-Brain Barrier**

MIT News



There are currently few good treatment options for glioblastoma, an aggressive type of brain cancer with a high fatality rate. One reason that the disease is so difficult to treat is that most chemotherapy drugs can't penetrate the blood vessels that surround the brain. A team of MIT researchers in Dr. Paula Hammond's (pictured) lab is now developing drug-carrying nanoparticles that appear to get into the brain more efficiently than drugs given on their own. [Read More](#)

**Cell Therapy for Lung Disease? Proof-of-Concept Study Shows Promise**

Boston Children's Hospital



Many serious pulmonary diseases, including genetic lung diseases, lack an effective treatment other than the most extreme: lung transplant. A team at Boston Children's Hospital envisions a much better option: cell therapy, using lung stem cells created from patients' own cells to repair or replace damaged lung tissue. For patients with genetic lung diseases, the cells could even be genetically corrected before the treatment. [Read More](#)

[View All Articles](#) | [Submit an Article](#)
**Upcoming Events in Boston**

June 8 8:30 AM	<b>The Neurobiology of Eating Behavior in Obesity: Mechanisms and Therapeutic Targets</b> Online
June 10 9:10 AM	<b>Life Sciences Day – "Belgium, the Health &amp; Biotech Valley of Tomorrow"</b> MassBioHub
June 13–14 12:00 PM	<b>8<sup>th</sup> Semi-Annual New England CryoEM Symposium</b> Online
June 17 8:00 AM	<b>20<sup>th</sup> Annual Cancer Research Symposium</b> Koch Institute
June 22–24 1:00 PM	<b>2022 RNA Therapeutics Symposium: From Concept to Clinic</b> Online

[View All Events](#) | [Submit an Event](#)
**Science Jobs in Boston**

- Scientist/Senior Scientist, RNA Design**  
Tessera Therapeutics
- Senior Formulation Scientist**  
Evelo Biosciences
- Histology Technical Lead**  
Zseventy bio
- Research Scientist I**  
Broad Institute
- Biospecimen Coordinator**  
Dana-Farber Cancer Institute

[View 56 Other Science Jobs](#) | [Submit a Job](#)

 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 Science News**  
 Free Weekly Updates on Your Field

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