

**Publications of the Week**
***Wolbachia* cifB Induces Cytoplasmic Incompatibility in the Malaria Mosquito Vector**

First Author: Kelsey Adams and Daniel Abernathy | Senior Author: Flaminia Cateruccia (pictured)  
 Nature Microbiology | Harvard T.H. Chan School of Public Health



*Wolbachia*, a maternally inherited intracellular bacterial species, can manipulate host insect reproduction by cytoplasmic incompatibility (CI), which results in embryo lethality in crosses between infected males and uninfected females. CI is encoded by two prophage genes, *cifA* and *cifB*. When the authors co-expressed *cifA* and *cifB* in male mosquitoes, the CI phenotype was attenuated. [Abstract](#)

**Photoacoustic Nanodroplets for Oxygen Enhanced Photodynamic Therapy of Cancer**

First Author: Marvin Xavierselvan | Senior Author: Srivalleesha Mallidi (pictured)  
 Photoacoustics | Tufts University and Massachusetts General Hospital



Photodynamic therapy (PDT) is a well-known cancer therapy that utilizes light to excite a photosensitizer and generate cytotoxic reactive oxygen species. Hypoxia in solid tumors promotes treatment resistance, resulting in poor PDT outcomes. The authors showcase their unique theranostic perfluorocarbon nanodroplets as a triple agent carrier for oxygen, photosensitizer, and indocyanine green that enables light triggered spatiotemporal delivery of oxygen to the tumors. [Abstract](#)

[View All Publications](#)
**Awards**
**TIME Names Kizzmekia Corbett One of Four Heroes of the Year**

Harvard T. H. Chan School of Public Health



Dr. Kizzmekia Corbett (pictured) of Harvard T.H. Chan School of Public Health was named one of four "heroes of the year" for 2021 by TIME magazine for helping develop the mRNA-based vaccine platform that enabled the creation of innovative and highly effective COVID-19 vaccines. Dr. Corbett, Assistant Professor of Immunology and Infectious Diseases, worked on vaccine development while at the Vaccine Research Center of the US National Institute of Allergy and Infectious Diseases. [Read More](#)

**Immuno-Engineering to Improve Immunotherapy Center at Harvard University Selects Dana-Farber Cancer-Immunologist Rizwan Romee as Its 2021 Grant Recipient**

Wyss Institute



Harvard's "Immuno-engineering to Improve Immunotherapy Center" at the Wyss Institute awarded cancer-immunologist Dr. Rizwan Romee (pictured) with a second annual grant. Dr. Romee and his group at Dana-Farber Cancer Institute will develop natural killer cell-based therapies by leveraging biomaterials-based immune cell amplifying and educating approaches. [Read More](#)

**Caroline Uhler Named Core Member of Broad Institute**

Broad Institute



The Broad Institute of MIT and Harvard has named Dr. Caroline Uhler (pictured) as a core institute member. A tenured Associate Professor in the Department of Electrical Engineering and Computer Science and the Institute for Data, Systems, and Society at MIT, Dr. Uhler is interested in gaining mechanistic insights to understand gene regulation in health and disease. [Read More](#)

**Alejandro Rondón Ortiz Wins Tau Leadership Award**

BU Biology



Alejandro Rondón Ortiz (pictured), a biology PhD candidate in the Emil lab, was recently awarded a Tau Leadership Award. The Rainwater Tau Leadership Fellows is funded by the Rainwater Charitable Foundation. This foundation invests in early-career scientist to promote the next generation of leaders in neurodegenerative disease research and beyond. [Read More](#)

[View All Awards](#)
**Local News**
**New Research May Identify Infants Who Face High Asthma Risk after Viral Lung Infections**

Massachusetts General Hospital



A type of viral lung infection called bronchiolitis is the leading cause of hospitalizations in US infants as well as a major risk factor for developing asthma. New research led by investigators at Massachusetts General Hospital has revealed a complex interplay among the infecting virus, the airway's microbial composition and function, and the infant's immune response that all contribute to a child's risk of developing asthma after bronchiolitis. [Read More](#)

**Molecular Analysis Advances Risk Profiling and Assessment of Immunotherapy Response in Smoldering Myeloma**

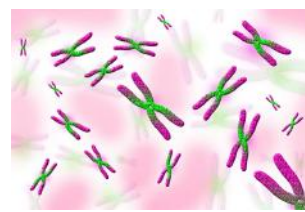
Dana-Farber Cancer Institute



Molecular and genetic research by scientists at Dana-Farber Cancer Institute has advanced the categorization of different risk groups in patients with smoldering myeloma. Research led by Drs. Irene Ghobrial (pictured) and Romanos Sklaventis-Pistofidis identified novel biomarkers in the immune environment of smoldering myeloma cells that may predict patients' likelihood of responding to treatment with immunotherapy. [Read More](#)

**Building Bridges: GA4GH and a Global Infrastructure for Seamless Genomic Data Sharing**

Broad Institute



Launched in 2013, the Global Alliance for Genomics and Health (GA4GH) is a community of 650 organizations and 1,000 individual members from more than 90 countries dedicated to creating standards, policies, and approaches that promote effective and responsible genomic and health-related data sharing. GA4GH is building common pipelines, languages, and rules so that researchers can share and analyze genomic and clinical data in a consistent way. [Read More](#)

**Preventing and Rescuing Hearing Loss**

Harvard Stem Cell Institute



A team of Harvard Stem Cell Institute researchers at Massachusetts Eye and Ear, led by Dr. Albert Edge, has identified the mechanism that can lead to deafness in the rare syndrome Norrie disease. The researchers found that the Norrie Disease Protein, which is lacking in patients with the rare disease, is essential for the maintenance and survival of hair cells, the cells in the ear's cochlea that are responsible for hearing. [Read More](#)

**Three Questions: Kristin Knouse on the Liver's Regenerative Capabilities**

MIT News



Why is the liver the only human organ that can regenerate? How does it know when it's been injured? What can our understanding of the liver contribute to regenerative medicine? These are just some of the questions that new Assistant Professor of Biology Dr. Kristin Knouse (pictured) and her lab members are asking in their research at the Koch Institute for Integrative Cancer Research. [Read More](#)

**FDA Approval Offers Hope for Prevention of Acute Graft-Versus-Host Disease**

Dana-Farber Cancer Institute



The US Food and Drug Administration (FDA) has approved a treatment to prevent acute graft-versus-host disease in patients two years of age or older receiving a hematopoietic stem cell transplant from a matched or single human leukocyte antigen mismatched unrelated donor. The approval is based on two key studies, one of which was led by Dr. Leslie Kean (pictured), Director of the Stem Cell Transplant Center at Dana-Farber/Boston Children's Cancer and Blood Disorders Center. [Read More](#)

**Meet a Whitehead Staff Scientist: Lucila Scimone**

Whitehead Institute



Dr. Lucila Scimone (pictured) is a staff scientist in Dr. Peter Reddien's lab studying how cells build and regenerate body parts in the flatworm planarian. Staff scientists are typically senior researchers in a lab, who have completed a PhD and postdoc and then have chosen to stay in an academic research position. During their long tenure in a lab, they may take on other responsibilities in addition to research. [Read More](#)

**How the Broad's Genomics Platform Ramped Up Human and Viral Sequencing and Kept Processing COVID-19 Tests, All at the Same Time**

Broad Institute



This year has been the biggest yet for the Broad Institute's Genomics Platform. The team continued its large-scale COVID-19 diagnostic program, launched in March 2020, and is processing up to 120,000 tests each day. In collaboration with the Broad's Viral Genomics Group, they are also sequencing up to 10,000 SARS-CoV-2 viral genomes a week to look for the Omicron variant and monitor other variants of concern. [Read More](#)

**From Counting Blood Cells to Motion Capture, Sensors Drive Patient-Centered Research**

MIT News



Sensors and sensing systems — from devices that count white blood cells to technologies that monitor muscle coordination during rehabilitation — can positively impact medical research, scientists said at the 2021 SENSE.nano Symposium. "In this era of big data, sensors are everywhere — in our homes and vehicles, medical devices, phones, and even clothing," says MIT.nano Director Dr. Vladimir Bulovic (pictured). [Read More](#)

**A Step Toward "Living Biotherapeutics"**

MIT News



The human gut is home to thousands of species of bacteria, and some of those bacteria have the potential to treat a variety of gastrointestinal diseases. One of the obstacles to developing these "living biotherapeutics" is that many of the species that could be beneficial are harmed by oxygen. MIT chemical engineers have now shown that they can protect those bacteria with a coating that helps them to survive the manufacturing process. [Read More](#)

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

- January 5**  
 4:00 PM  
**Unresolved Challenges in the Clinical Care of the Patient with Epilepsy**  
 Online
- January 11**  
 11:00 AM  
**Nano Explorations: Peptide Beacon Integrated Planar Waveguide Sensor for Low-Cost, Rapid and Highly Sensitive Detection of COVID-19**  
 Online
- January 11**  
 1:00 PM  
**Frontiers in Biostatistics: Studies on COVID-19 and Cancer Using National Real-World VA Data**  
 Online
- January 12**  
 12:00 PM  
**Amyloid PET Ordering and Implications in VA Boston Memory Disorders Clinic with Dr. Turk**  
 Online
- January 14-16**  
 8:00 AM  
**Forsyth Postdoctoral Symposium**  
 Forsyth Institute

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

Harvard Medical School

**Research Associate, Cancer Discovery**

Omega Therapeutics

**Principal Scientist**

Sanofi

**Research Scientist II, Research Collaborations**

Novartis

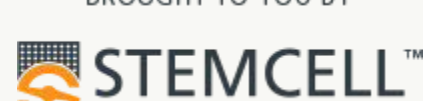
**Associate Scientist II/III, Cellular Neuroimmunology**

Biogen

[View 87 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