

Publications of the Week

Dissecting the Role of the Human Microbiome in COVID-19 via Metagenome-Assembled Genomes

First Author: Shanlin Ke | Senior Author: Yang-Yu Lu *(pictured)*
Nature Communications | Brigham and Women's Hospital and Harvard Medical School



Little is known about the relation between the human microbiome and COVID-19. The authors used whole-metagenome shotgun sequencing data together with assembly and binning strategies to reconstruct metagenome-assembled genomes from 514 COVID-19 related nasopharyngeal and fecal samples in six independent cohorts. [Abstract](#)

Targeting Innate Immunity-Driven Inflammation in CKD and Cardiovascular Disease

First Author: Thimoteus Speer | Senior Author: Paul Ridker *(pictured)*
Nature Reviews Nephrology | Brigham and Women's Hospital and Harvard Medical School



Mortality among patients with chronic kidney disease (CKD) is largely a consequence of cardiovascular disease (CVD) and is a particular concern given the increasing prevalence of CKD. The authors summarize current understanding of the role of inflammation in the pathogenesis of CKD and its associated CVD, and how this knowledge may translate into novel therapeutics. [Abstract](#)

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Awards

The Wyss Institute's 2022-2023 Validation Projects

The Wyss Institute



Every year, the Wyss Institute names a class of Validation Projects that receive funding, business development support, and a wide variety of resources to support them on every step towards commercializing their technologies. This year's recipients include Dr. Girija Goyal *(pictured)*, who is leading a Validation Project to identify new immunotherapy treatments for pancreatic cancer using an organ chip model of tertiary lymphoid organs. [Read More](#)

CityLab Receives NIH Award to Increase Diversity of STEM and Biomedical Sciences Workforce

Boston University School of Medicine



Boston University CityLab, a biotechnology learning laboratory for middle and high school teachers and their students, has received a five-year, \$1.3 million Science Education Partnership Award grant from the National Institute of General Medical Sciences of the National Institutes of Health (NIH). This grant will allow CityLab to develop, implement and evaluate a new curriculum for high school students. [Read More](#)

Laura Kiessling Wins Ronald Breslow Award for Achievement in Biomimetic Chemistry

MIT Chemistry



Novartis Professor Dr. Laura Kiessling *(pictured)* has been named this year's winner of the Ronald Breslow Award for Achievement in Biomimetic Chemistry by the American Chemical Society. This national award is given in recognition of outstanding contributions to the field of biomimetic chemistry. The Kiessling Group uses chemical biology to elucidate the biological roles of carbohydrates, with a focus on learning new mechanistic concepts. [Read More](#)

Haiyan Gong Receives BrightFocus Award

Boston University School of Medicine



Dr. Haiyan Gong *(pictured)*, a Professor of Ophthalmology and Anatomy and Neurobiology, has received \$200,000 through a Standard Award in National Glaucoma Research from the BrightFocus Foundation. Dr. Gong is currently developing new therapeutic strategies to lower intraocular pressure in glaucoma, through understanding the mechanisms that regulate aqueous outflow resistance in normal eyes and how this resistance increases in primary open-angle glaucoma. [Read More](#)

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Local News

Biologists Gain Insight into Repetitive Protein Sequences

MIT News



MIT researchers have used a technique called dot-plot matrix, which is a way to visually represent amino acid sequences, to compare protein sequences known as "low-complexity regions" across many different species. "[...] Our broader approach allows us to see similarities between [...] properties, suggesting that maybe the functions of low-complexity regions aren't so disparate after all," says Byron Lee *(pictured)*, an MIT graduate student. [Read More](#)

Advancing Discovery

Harvard Medical School



The road to illuminating the biological mysteries of the human body is filled with hurdles, not the least of which is the daunting task of obtaining funding to support early-stage discoveries. At Harvard Medical School, the Dean's Innovation Awards addressed that challenge by providing catalytic early support for research projects probing some of the most confounding questions in biomedicine. [Read More](#)

By Blocking DNA Repair, Drug Combination Proves Lethal to Hard-to-Treat Tumor Cells

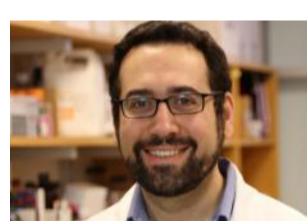
Dana-Farber Cancer Institute



In new research, Dana-Farber scientists have found a way to stop the growth of tumor cells with TP53 mutations — to have the cells kill themselves, in fact — while circumventing TP53 entirely. The technique, described in a paper in the journal *Cancer Research*, involves using two drugs that cause the cells to accumulate so much genetic damage, they can no longer survive. [Read More](#)

What Causes Type 1 Diabetes?

Boston College News



While genetics studies have identified mutations that increase the risk of developing type 1 diabetes, the gene pool alone cannot fully explain who is susceptible to the disease. Dr. Emrah Altindis *(pictured)* and colleagues have been probing the interconnectedness of gut microbiota, the immune system, and the pancreas in the search for answers and a lead on potential paths to combat the disease. [Read More](#)

Study of Cancer Immunotherapy Patients Reveals Markers of Treatment Response

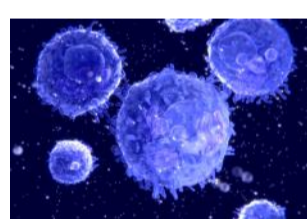
The Broad Institute



To learn about the molecular mechanisms underlying differences in responses to CAR-T cell therapy, researchers led by Drs. Catherine Wu *(pictured)* and Gad Getz studied blood samples of patients who received CAR-T therapy. They found molecular markers that indicate how a patient responded to the treatment, and also identified specific types of immune cells that likely contribute to relapse. [Read More](#)

Immune Cells Engineered to Battle Cancer Can Be Turned "On" or "Off"

The Brink



One big, relatively recent advancement in the fight against cancer is CAR T-cell therapy, a treatment that involves modifying immune cells called T cells, microscopic powerhouses that take on infections. Scientists have figured out a way to remove T cells from a person's blood, insert a special kind of gene called a receptor, which binds to cancer cells, and transfer the engineered T cells back to the patient. [Read More](#)

Mass General Study Finds Damage in the Lungs of Chronic E-Cigarette Users

Massachusetts General Hospital



Chronic use of e-cigarettes, commonly known as vaping, can result in progressive small airway obstruction and asthma-like symptoms such as shortness of breath and chest pains, according to researchers at Massachusetts General Hospital. The team found a small sample of patients with fibrosis and damage in the small airways, similar to the chemical inhalation damage to the lungs typically seen in soldiers returning from overseas conflicts who had inhaled mustard or similar types of noxious gases. [Read More](#)

Studies of Autism Tend to Exclude Women, Researchers Find

MIT News



In recent years, researchers who study autism have made an effort to include more women and girls in their studies. However, despite these efforts, most studies of autism consistently enroll small numbers of female subjects or exclude them altogether, according to a new study from MIT. "I think the findings favor having a more inclusive approach and widening the lens to end up being less biased in terms of who participates in research," says Dr. John Gabrieli *(pictured)*. [Read More](#)

Three-Drug Combination Slows Progression of Advanced Kidney Cancer

Dana-Farber Cancer Institute



A targeted kinase inhibitor added to a two-drug immunotherapy combination slowed the progression of advanced kidney cancer in previously untreated patients, according to research led by Dr. Toni Choueiri *(pictured)*. "Patients who received the kinase inhibitor cabozantinib in addition to checkpoint-blockers nivolumab and ipilimumab experienced significantly improved progression-free survival compared to those who received only nivolumab and ipilimumab." [Read More](#)

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Upcoming Events in Boston

- September 20 10:00 am **Precision Medicine 2022: The New "Normal"?**
Joseph B. Marin Conference Center & Online
- September 20 2:30 pm **Women in Medicine and Science Symposium**
Brigham and Women's Hospital
- September 20 5:30 pm **Using Chemical and Biomedical Engineering to Advance Biomedicine**
Whitehead Institute for Biomedical Research
- September 21 3:30 pm **Research on Tap: Neuromonitoring Brain Health and Recovery**
Rajen Kilachand Center for Integrated Life Sciences and Engineering
- September 22 9:00 am **Picower Institute 20th Anniversary Exhibition: Two Decades of Discovery & Impact**
The Picower Institute for Learning and Memory

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Science Jobs in Boston

- Field Application Scientist, Primary and Cultured Cells**
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STEMCELL Technologies
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LabCentral
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MIT
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