



Publications of the Week

Immune Responses in Checkpoint Myocarditis Across Heart, Blood, and Tumor

First Authors: Steven Blum, Daniel Zlotoff, Neal Smith, Isabela Kernin, and Swetha Ramesh | Senior Author: Alexandra-Chloé Villani (pictured)
Nature | Massachusetts General Hospital, Broad Institute, Harvard University, MIT, and Mass General Cancer Center



Immune checkpoint inhibitors are widely used anticancer therapies that can cause morbid and potentially fatal immune-related adverse events such as immune-related myocarditis (irMyocarditis). Here, researchers sought to define immune responses in heart, tumor, and blood in patients with irMyocarditis by leveraging single-cell RNA sequencing coupled with T cell receptor sequencing, microscopy, and proteomics analyses. [Abstract](#) | [Press Release](#)

Bra1 Haploinsufficiency Promotes Early Tumor Onset and Epigenetic Alterations in a Mouse Model of Hereditary Breast Cancer

First Author: Carman Man-Chung Li | Senior Author: Joan Brugge (pictured)
Nature Genetics | Dana-Farber Cancer Institute, Broad Institute, and Harvard Medical School



Germline *BRCA1* mutation carriers face a high breast cancer risk. Using a new genetically engineered mouse model of germline *Bra1* heterozygosity, researchers demonstrate that early tumor onset in a *Bra1* heterozygous background cannot be fully explained by the conventional 'two-hit' hypothesis, suggesting the existence of inherent tumor-promoting alterations in the *Bra1* heterozygous state. [Abstract](#) | [Press Release](#)

Heterogeneous Genetic Architectures of Prostate Cancer Susceptibility in Sub-Saharan Africa

First Author: Rohini Janivara | Senior Authors: Joseph Lachance and Timothy Rebbeck (pictured)
Nature Genetics | Dana-Farber Cancer Institute and Harvard Medical School



Men of African descent have the highest prostate cancer incidence and mortality rates, yet the genetic basis of prostate cancer in African men has been understudied. Researchers used genomic data from Ghana, Nigeria, Senegal, South Africa, and Uganda to infer ancestry-specific genetic architectures and fine-map disease associations. Collectively, their findings emphasize the utility of conducting genetic studies that use diverse populations. [Abstract](#) | [Press Release](#)

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Awards

'I Couldn't Do This Research Without the New Lab'

ClarkNOW



A new research laboratory has been launched to greatly expand the capacity of students to prepare for jobs in Massachusetts' ever-growing, multi-billion-dollar biotechnology industry. Dr. Donald Spratt (pictured, center) was awarded a \$750,000 Workforce Development Capital Grant from the Massachusetts Life Sciences Center to transform the lab, introducing industry-standard equipment to conduct National Institutes of Health-funded research. [Read More](#)

MCB's Dr. Takao Hensch Receives Japanese National Honor

Harvard University Department of Molecular and Cellular Biology (MCB)



Dr. Takao Hensch (pictured), Professor of Molecular & Cellular Biology and Neurology at Boston Children's Hospital, will receive the Order of the Rising Sun, Gold Rays with Neck Ribbon—one of Japan's highest civilian honors. This prestigious award recognizes a lifetime of exceptional contributions to Japan's global standing through distinguished achievements in their field of endeavor. [Read More](#)

Research Excellence Award Winners

Brigham and Women's Hospital



Brigham and Women's Hospital congratulates this year's Research Excellence Award Winners. These 13 presenters were chosen from the 129 abstracts submitted for the BRI Fall Poster Session. Among the cohort is Dr. Mehmet Furkan Burak (pictured) for his abstract, "An Adipo-Pulmonary Axis Mediated by FABP4 Hormone Defines a Target Against Obesity-Induced Airway Disease". [Read More](#)

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Local News

A Cell Protector Collaborates with a Killer

McGovern Institute



By studying the microscopic roundworm *Caenorhabditis elegans*, scientists at MIT's McGovern Institute have begun to unravel a longstanding mystery about the factors that control apoptosis: how a protein capable of preventing programmed cell death can also promote it. This study is led by McGovern Investigator Dr. Robert Horvitz (pictured). [Read More](#)

Research Spotlight: Researchers Develop SCOPE to Improve Early-Stage Cancer Detection

Massachusetts General Hospital



Drs. Cesar Castro (pictured) and Hakho Lee have presented SCOPE (self-amplified and CRISPR-aided operation to profile EVs), a new approach that provides several advantages over existing blood tests that analyze tumor DNA. Currently available tests focus on circulating tumor DNA, which breaks down quickly, but SCOPE uses extracellular vesicles. [Read More](#)

Women's Health Is Chronically Understudied, But These Engineers Are Charging Forward

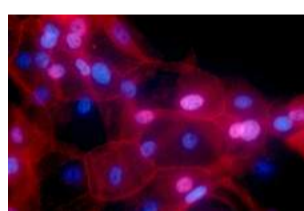
The Brink



"Basically any tissue of the female reproductive system is understudied," says Dr. Catherine Klapperich (pictured, left) from Boston University College. Research on women's anatomy and pain has been underfunded for decades, meaning little is known about what's happening at the cellular level in women's bodies and how that impacts their health. Dr. Klapperich and her colleague Dr. Joyce Wong (right) are aiming to change that. [Read More](#)

Startup Gives Surgeons a Real-Time View of Breast Cancer During Surgery

MIT News



Breast cancer is the second most common type of cancer and cause of cancer death for women in the US, affecting one in eight women overall. Now, an MIT spinout is giving surgeons a real-time view of cancerous tissue during surgery. Lumicell has developed a handheld device and an optical imaging agent that allow surgeons to scan the tissue within the surgical cavity to visualize residual cancer cells. [Read More](#)

Metabolomic Analyses May Help Predict Healthy Aging, Longevity, and Mortality

Tufts Medicine



A new study led by Dr. Paola Sebastiani (pictured) at Tufts Medical Center has identified more than 300 unique metabolic markers associated with aging, extreme longevity, and mortality. Aging is such a complex phenomenon. Identifying these biomarkers could offer new insights into how we age, improve early prediction of age-related diseases, and suggest interventions for promoting healthy longevity. [Read More](#)

A Causal Theory for Studying the Cause-and-Effect Relationships of Genes

MIT News



By studying changes in gene expression, researchers learn how cells function at a molecular level, which could help them understand the development of certain diseases. MIT researchers have now developed theoretical foundations for methods that could identify the best way to aggregate genes into related groups so they can efficiently learn the underlying cause-and-effect relationships between many genes. [Read More](#)

Q&A: Sandeep Jubbal on Long COVID, Antiviral Treatments, and New Vaccine

UMass Chan Medical School



Since the outbreak of the coronavirus pandemic in late 2019, the evolution of COVID-19 management has changed for both individuals and the greater population. UMass Chan Medical School spoke with infectious diseases and immunology expert Dr. Sandeep Jubbal (pictured) on the state of COVID today, vaccines, the role of at-home tests in diagnosis, and his recommendations for people diagnosed with COVID-19 or long COVID. [Read More](#)

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Upcoming Events in Boston

- November 19 1:00 PM **Biology of Endemic, Emerging, and Even Submerging Viruses**
Albert Sherman Center Auditorium
- November 19 5:30 PM **National Academy of Sciences Richard Lounsbery Lecture: An Evening with Dr. Feng Zhang**
Museum of Science
- November 25 8:00 AM **2024 Cancer Symposium**
Yawkey Center for Cancer Care
- December 3 5:30 PM **Lights, Camera, Action**
Koch Institute for Integrative Cancer Research
- December 17 12:00 PM **BWH Cancer Research Symposium**
Brigham & Women's Hospital

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