

Publications of the Week

Spatially Aware Deep Learning Reveals Tumor Heterogeneity Patterns That Encode Distinct Kidney Cancer States

First Author: Jackson Nyman | Senior Author: Eliezer Van Allen *(pictured)*
Cell Reports Medicine | Dana-Farber Cancer Institute, Broad Institute, Harvard, and Brigham and Women's Hospital



Clear cell renal cell carcinoma (ccRCC) is molecularly heterogeneous, immune infiltrated, and selectively sensitive to immune checkpoint inhibition (ICI). However, the joint tumor-immune states that mediate ICI response remain elusive.

Researchers have developed spatially aware deep-learning models of tumor and immune features to learn representations of ccRCC tumors using diagnostic whole-slide images in untreated and treated contexts. [Abstract](#)

Atypical Droplet Digital Polymerase Chain Reaction Patterns That Indicate Uncommon but Clinically Actionable EGFR Mutations in Lung Cancer

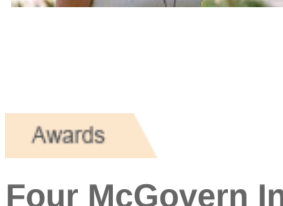
First Author: Adam Lechner *(pictured)* | Senior Author: Fei Dong
Archives of Pathology & Laboratory Medicine | Brigham and Women's Hospital and Dana-Farber Cancer Institute



Droplet digital polymerase chain reaction (ddPCR) is a sensitive method to detect common pathogenic EGFR mutations in non-small cell lung cancer. ddPCR analysis of uncommon pathogenic EGFR variants can yield unique and reproducible results that can aid in appropriate targeted therapy selection for patients with non-small cell lung cancer. [Abstract](#)

Cell-Type-Specific Regulation of APOE and CLU Levels in Human Neurons by the Alzheimer's Disease Risk Gene SORL1

First Author: Hyo Lee | Senior Author: Tracy Young-Pearse *(pictured)*
Cell Reports | Brigham and Women's Hospital and Harvard Medical School



SORL1 is implicated in the pathogenesis of Alzheimer's disease through genetic studies. To interrogate the roles of SORL1 in human brain cells, SORL1-null induced pluripotent stem cells were differentiated to neuron, astrocyte, microglial, and endothelial cell fates. This study investigates SORL1 to provide a mechanistic link between strong genetic risk factors for Alzheimer's disease. [Abstract](#)

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Awards

Four McGovern Investigators Receive NIH BRAIN Initiative Grants

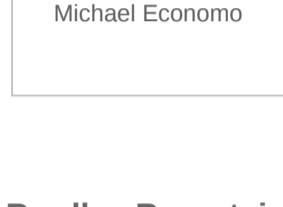
McGovern Institute



The National Institutes of Health (NIH) announced a new program to support research projects that have the potential to reveal an unprecedented and dynamic picture of the connected networks in the brain. Four of these NIH-funded research projects will take place in McGovern labs. The projects are led by Dr. Guoping Feng, Dr. Ila Fiete, Dr. Ian Wickersham, and Dr. Satra Ghosh *(pictured, left to right)*. [Read More](#)

Kilachand Fund Awards Go to Crystal Rib Cage and Brain Connection Projects

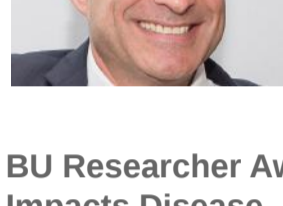
The Brink



When infection or disease strikes the lung—cancer, pneumonia, COVID-19—it's tough for researchers to see what's going on inside the organ. A crystal rib cage will enable scientists to visualize in real time how the lung develops immunity against infection. The crystal rib cage is one of two projects to win a 2023 Rajen Kilachand Fund for Integrated Life Sciences & Engineering award. It is led by Dr. Hadi Nia *(pictured, center left)* and Dr. Joseph Mizgerd *(center right)*. [Read More](#)

Bradley Bernstein of Dana-Farber Elected to National Academy of Medicine

Dana-Farber Cancer Institute



Dr. Bradley Bernstein *(pictured)*, Chair of Cancer Biology at Dana-Farber Cancer Institute, has been elected to the National Academy of Medicine (NAM). Considered one of the highest honors in the fields of health and medicine, election into the NAM recognizes individuals who have demonstrated outstanding professional achievement and commitment to service. [Read More](#)

BU Researcher Awarded \$3.7 Million to Study How Endothelial Cell Health Impacts Disease

Boston University



Dr. Naomi Hamburg *(pictured)*, Professor of Medicine at Boston University School of Medicine, has been awarded a five-year, \$3.7 million grant from the National Heart, Lung and Blood Institute for her research study, "Endothelial Cell Health Across the Spectrum of Cardiometabolic Disease." This study will leverage a unique and highly experienced multidisciplinary team. [Read More](#)

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Local News

Science for Living: Understanding Preeclampsia, Its Toll on Black Women, and a Promising Therapeutic on the Way

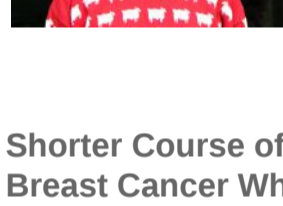
UMass Chan Medical School



Dr. Melissa Moore *(pictured)* Professor of RNA therapeutics at UMass Chan, has been working on a therapy for preeclampsia since she developed the condition herself 20 years ago. This new RNA therapeutic for preeclampsia, a hypertensive disorder of pregnancy that can progress to eclampsia, may soon be able to reduce the condition's deadly toll. [Read More](#)

Alain Viel Named Chairholder for UNESCO Chair on Life Sciences and Social Innovation

Harvard University Department of Molecular and Cellular Biology (MCB)



Alain Viel *(pictured)* has taken the helm of the UNESCO Chair on Life Sciences and Social Innovation. "The idea of the UNESCO chair is to create a network of people within the organization to work together to address issues in education. The mission is to have our institution involved in the development of educational programs that would serve the global community," says Viel, a Senior Lecturer in MCB. [Read More](#)

Shorter Course of Radiation Therapy Is Safe for Patients with Early-Stage Breast Cancer Who Have Undergone Mastectomy and Reconstruction

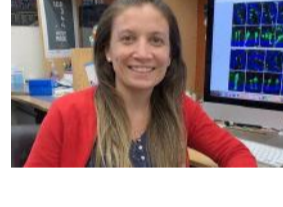
Dana-Farber Cancer Institute



Many patients with breast cancer opt for a mastectomy and postmastectomy radiation therapy to reduce the chances of cancer recurrence. However, radiation therapy increases the risk of complications with breast reconstruction. Researchers Dr. Rinaa Punjlia *(pictured, left)* and Dr. Julia Wong *(right)* found that a shorter course of radiation therapy after mastectomy and breast reconstruction surgery provides the same protection against breast cancer recurrence. [Read More](#)

Research Spotlight: Addressing Crucial Concepts of Mucosal Immunology to Learn More About the Causes of Male Infertility

Massachusetts General Hospital



Dr. Maria Agustina Battistone *(pictured)*, an Investigator in the Department of Nephrology at Massachusetts General Hospital and an Assistant Professor of Medicine at Harvard Medical School, investigates how regulatory T cells play a crucial role in maintaining sperm tolerance and male fertility. This research spotlight highlights Dr. Battistone's methodologies and current research focus. [Read More](#)

A Research Team Searches for Every Gene That Helps Tumors Evade Immunotherapy

Broad Institute



In 2011, Dr. Robert Manguso *(pictured)* was working in a cell biology lab when his mother was diagnosed with Merkel cell carcinoma, a rare and aggressive skin cancer. While learning about treatment options, Manguso was struck by the promise of immunotherapy, which offered the potential to harness the immune system to fight cancer without the harsh side effects his mother was experiencing. [Read More](#)

Ultrasensitive Blood Test Detects 'Pan-Cancer' Biomarker

Dana-Farber Cancer Institute



Current cancer assessment methods have limited specificity and sensitivity and can be prohibitively expensive. In a study led by Dr. Kathleen Burns *(pictured)*, researchers developed a low-cost, ultrasensitive blood test to detect minute levels of a cancer biomarker that is highly specific to multiple common cancers. [Read More](#)

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Upcoming Events in Boston

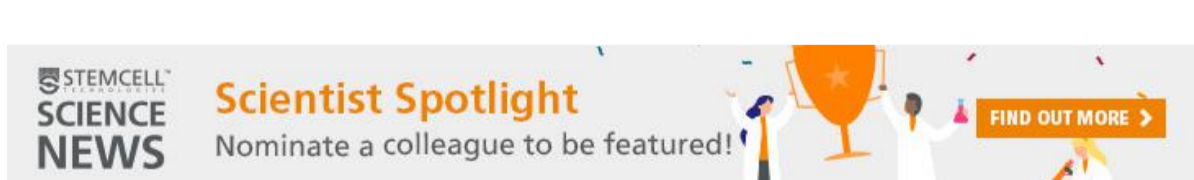
- October 16 1:00 PM **The Hidden Link Between Inflammation and Disease** Online
- October 16 1:30 PM **MassBioEd Career Expo** Campus Center Auditorium
- October 17 12:00 PM **Innovators in Therapeutics Speaker Series with Dr. Michael Rosenblatt** Online
- October 19 4:00 PM **BCS Colloquium Series: Michael Bernstein** Singleton Auditorium
- October 19 - 20 8:00 AM **Pharma Partnering Summit** Sheraton Boston Needham Hotel


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Other Science Jobs in Boston

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- Pre-Doctoral Fellow Research**
Mass General Brigham
- Postdoctoral Associate**
Broad Institute
- Upper Science Specialist, Instructional Design**
New Globe
- Assistant Professor, Biochemistry**
Department of Biology at the University of Massachusetts Boston

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