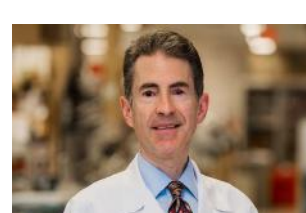


Publications of the Week
All-Optical Electrophysiology Reveals the Role of Lateral Inhibition in Sensory Processing in Cortical Layer 1

 First Author: Linlin Fan | Senior Author: Adam Cohen (pictured)
 Cell | Harvard University


Cortical layer 1 (L1) interneurons have been proposed as a hub for attentional modulation of underlying cortex, but the transformations that this circuit implements are not known. The authors combined genetically targeted voltage imaging with optogenetic activation and silencing to study the mechanisms underlying sensory processing in mouse barrel cortex L1. Whisker stimuli evoked precisely timed single spikes in L1 interneurons, followed by strong lateral inhibition. [Profile](#) | [Abstract](#)

Aneuploidy and a Deregulated DNA Damage Response Suggest Haploinsufficiency in Breast Tissues of BRCA2 Mutation Carriers

 First Author: Mhriban Karaayvaz-Yildirim | Senior Author: Leif Ellisen (pictured)
 Science Advances | The Picower Institute for Learning and Memory, the Broad Institute, the Koch Institute, Massachusetts Eye and Ear Infirmary, Massachusetts General Hospital and Harvard Medical School


Women harboring heterozygous germline mutations of *BRCA2* have a 50 to 80% risk of developing breast cancer, yet the pathogenesis of these cancers is poorly understood. To reveal early steps in *BRCA2*-associated carcinogenesis, the authors analyzed sorted cell populations from freshly-isolated, non-cancerous breast tissues of *BRCA2* mutation carriers and matched controls. Single-cell whole-genome sequencing demonstrated sub-chromosomal copy number variations. [Profile](#) | [Abstract](#)

Antioxidant CoQ10 Restores Fertility by Rescuing Bisphenol A-Induced Oxidative DNA Damage in the Caenorhabditis Elegans Germline

 First Author: Maria Fernanda Homos Carneiro | Senior Author: Monica Colaiácovo (pictured)
 Genetics | Harvard Medical School


Endocrine-disrupting chemicals are ubiquitously present in our environment, but the mechanisms by which they adversely affect human reproductive health and strategies to circumvent their effects remain largely unknown. The authors show that in *Caenorhabditis elegans*, supplementation with the antioxidant Coenzyme Q10 (CoQ10) rescues the reproductivity induced by the widely used plasticizer and endocrine disruptor bisphenol A (BPA), in part by neutralizing DNA damage resulting from oxidative stress. [Abstract](#)

[View All Publications](#)
Awards
Lloyd P. Aiello, MD, PhD Receives Prestigious Friedenwald Award

Joslin Diabetes Center



Dr. Lloyd P. Aiello (pictured) is the 2020 recipient of the prestigious Friedenwald Award from the Association for Research in Vision and Ophthalmology. Dr. Aiello's contributions to understanding mechanisms underlying diabetic retinopathy, development of novel therapeutics such as VEGF and plasma kallikrein inhibitors, telemedicine initiatives and novel retinal imaging modalities have had a global influence on the evaluation and care of diabetic eye disease. [Read More](#)

UMass Worcester Prevention Research Center Funding Renewed

UMass Med Now



The UMass Worcester Prevention Research Center at UMass Medical School has been awarded a \$3.75 million, five-year grant renewal from the U.S. Centers for Disease Control. The center, co-led by Stephenie Lemon, PhD, and Milagros Rosal, PhD, has been part of the nationwide Prevention Research Center consortium since 2009. This funding gives them a unique opportunity as an academic center to work very closely with boots-on-the-ground public health practitioners. [Read More](#)

Joshua Sanes Awarded the 2020 Scolnick Prize

McGovern Institute



The McGovern Institute has announced that Dr. Joshua Sanes (pictured) is the 2020 recipient of the Edward M. Scolnick Prize in Neuroscience. Sanes was recognized for his numerous contributions to our understanding of synapse development. It was Sanes who focused the power of molecular genetics toward understanding how synapses are built. He is currently the Jeff C. Tarr Professor of Molecular and Cellular Biology at the Center for Brain Science at Harvard University. [Read More](#)

[View All Awards](#)
Local News
Mass General Hospital Researchers Identify New "Universal" Target for Antiviral Treatment

Mass General News



As the coronavirus outbreak shows, viruses are a constant threat to humanity. Vaccines are regularly developed and deployed against specific viruses. Now, researchers at Massachusetts General Hospital (MGH) have uncovered a novel potential antiviral drug target that could lead to treatments protecting against a host of infectious diseases – creating a pan, or universal, treatment. Their work suggests that the protein Argonaute 4 (AGO4) is an "Achilles heel" for viruses. [Read More](#)

Retro Style

Harvard Medical School



A *Caenorhabditis elegans* worm squirms its way through a compost heap, sensory neurons in its nose helping it navigate oxygen and carbon dioxide cues as it searches for food. The lab of Harvard Medical School geneticist Max Heiman studies these neurons to illuminate nervous system development and uncover clues about how things go awry in humans, leading to neurodevelopmental disorders and neurodegeneration. [Read More](#)

Why C. difficile Infection Spreads despite Increased Sanitation Practices

MIT News



Once widely considered an antibiotic- and hospital-associated pathogen, recent research into *C. difficile* has shown the infection is more frequently acquired outside of hospitals. Now, a team of researchers has shown that GI disturbances, such as those caused by food poisoning and laxative abuse, trigger susceptibility to colonization by *C. difficile*, and carriers remain *C. difficile*-positive for a year or longer. [Read More](#)

Cancer Cells Alter Protein Production Machinery to Hasten Metastasis

Mass General News



Hormone receptor-positive breast cancer can spread throughout the body via the bloodstream as circulating tumor cells, or CTCs, which eventually reach distal (remote) body sites to form metastatic tumors. An increase in ribosomes, the protein-making machinery found in every living cell, increases their potential to form metastasis, according to investigators from Massachusetts General Hospital Cancer Center and Harvard Medical School. [Read More](#)

Studying Tools to Improve the Quality of Life for People with Cystic Fibrosis

Boston Children's Hospital



Thanks to advances in treatments in recent years, people with cystic fibrosis (CF) are living longer than ever before. The Cystic Fibrosis Center, through the Division of Pulmonary Medicine at Boston Children's Hospital, is making great strides in these areas, supporting patients with CF in innovative ways and helping to improve their health and well-being through new tools and approaches that can simplify their efforts and reduce stress. [Read More](#)

Don't Hate Your Guts – Heal Them

Wyss Institute



Each one of us carries about 38 trillion bacteria around with us in our gut every day. How can such a veritable zoo of microbes reside peacefully in our guts without triggering our immune systems to attack them, as do "bad" bacteria that cause disease? The answer lies in the intestinal mucosal barrier and scientists at the Wyss Institute are exploring it. [Read More](#)

Elicio Therapeutics and Natera to Collaborate in Phase I/II Pancreatic Cancer Study of ELI-002

Natera



Elicio Therapeutics, a next generation immuno-oncology company, and Natera, Inc., a global leader in cell-free DNA testing, have announced their collaboration in a prospective, multicenter Phase 1/2 study of ELI-002, an amphiphilic immuno-oncology therapeutic targeting KRAS mutations in the adjuvant setting for patients with pancreatic ductal adenocarcinoma who have undergone neoadjuvant chemotherapy followed by pancreatectomy. [Read More](#)

Looking for Clues to Improve the Life of a Transplanted Organ

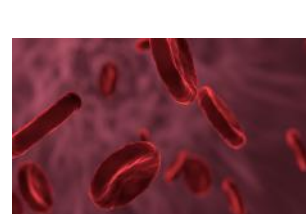
Boston Children's Hospital



The Transplant Research Program (TxRP) at Boston Children's Hospital is the only pediatric transplantation research program in the U.S. committed to better understanding the molecular basis for organ rejection after transplantation in children. Within the last year, members of the TxRP have initiated a new initiative to extend the longevity of transplanted organs and to develop and use biomarkers for monitoring patients. [Read More](#)

Seeing Blood Stem Cells Where They Live

Harvard Stem Cell Institute



The stem cells found in bone marrow have saved the lives of thousands of leukemia patients through transplantation, as they are capable of making any type of blood cell. Yet there are roadblocks to understanding these blood stem cells in detail, as it has not been possible to study them at their source. Now, researchers at the Harvard Stem Cell Institute have found a way to observe blood stem cells at an unprecedented level of accuracy and detail in mice. [Read More](#)

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

- February 25
8:00 AM **Leading the Change to Continuous Manufacturing Of Small Molecules**
Ragon Auditorium
- February 26
3:00 PM **8th Neurodegenerative Drug Development Summit**
Hyatt Regency Boston
- February 27
9:00 AM **AI Powered Drug Discovery and Manufacturing Conference 2020**
MIT Samberg Conference Center
- February 28
10:00 AM **2020 Rare Disease Day**
Omni Parker House
- March 9
8:00 AM **Environmental Health Risk: Analysis and Applications**
Harvard T.H. Chan School of Public Health

[View All Events](#) | [Submit an Event](#)
STEMCELL Jobs

- Scientific Sales Representative, Cell Separation Products (Cambridge, MA)**
STEMCELL Technologies
- Scientific Inside Sales Representative (Cambridge, MA)**
STEMCELL Technologies
- Scientific Marketing Specialist (Burnaby, BC)**
STEMCELL Technologies
- Associate Product Manager, Mesenchymal & Myogenic (Burnaby, BC)**
STEMCELL Technologies
- Scientist, Liver (Vancouver, BC)**
STEMCELL Technologies

[View 99 Other STEMCELL Jobs](#)
Other Science Jobs in Boston

- Assistant/Associate Professor, Data Sciences, Genomics**
Dana-Farber Cancer Institute
- Postdoctoral Scholar Position in RNA Biology and Gene Regulation**
Brandeis University
- Research Scientist, Tools and Assay Development**
Manus Bio
- Associate Scientist I (Engineer), Cell Culture**
Abbvie
- Delivery Innovation & Process Development Internship**
Intellia Therapeutics

[View 171 Other Science Jobs](#) | [Submit a Job](#)
[Where is pluripotent stem cell research now? Add your voice in this survey.](#)

 Submit your articles and events by reaching out to us at info@sciencelnboston.com.

BROUGHT TO YOU BY


STEMCELL Technologies
 Products | Services

STEMCELL's Science Newsletters
 Free Weekly Updates on Your Field

The Stem Cell Podcast
 Interviews and Updates on Stem Cell Science