

**Publications of the Week**
**Host-Associated Microbiomes Are Predicted by Immune System Complexity and Climate**

 First Author: Douglas Woodhams *(pictured)* | Senior Author: Ross Whetstone  
 Genome Biology | University of Massachusetts Boston


Host-associated microbiomes, the microorganisms occurring inside and on host surfaces, influence evolutionary, immunological, and ecological processes. The authors used the dataset from the Earth Microbiome Project and accumulated data from 50 additional studies totaling 654 host species and over 15,000 samples to examine global-scale patterns of bacterial diversity and function. [Abstract](#)

**Assessing the Progression of Systemic Sclerosis by Monitoring the Tissue Optic Axis Using PS-OCT**

 First Author: David Adams | Senior Author: Melissa Suter *(pictured)*  
 Nature Scientific Reports | Massachusetts General Hospital and Harvard Medical School


The clinical assessment of fibrosis is critical to the diagnosis and management of patients. Current clinical standards for patient assessment is to use skin fibrosis as an indicator of organ involvement, though this approach is highly subjective and relies on manual palpation. The development of a new method, like PS-OCT, for accurately quantifying collagen content may therefore significantly improve the accuracy of the traditional skin score in patients with systemic sclerosis. [Abstract](#)

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**Awards**
**Human Frontier Science Program Awards Angelika Amon the 2020 HFSP Nakasone Award**

Human Frontier Science Program



The Human Frontier Science Program (HFSP) has announced that its 2020 HFSP Nakasone Award will be awarded to Dr. Angelika Amon *(pictured)* of the Koch Institute for Integrative Cancer Research at the Massachusetts Institute of Technology for her discovery of aneuploidy-induced cellular changes and their contribution to tumorigenesis which paved the way for exploiting aneuploidy as a therapeutic target in cancer treatment. [Read More](#)

**Shibley Prostate Cancer Pilot Grant Awardees Announced**

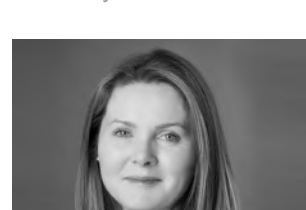
BU School of Medicine



Dr. Christopher Andry *(pictured)*, Professor and Chair of Pathology & Laboratory Medicine, and Dr. Gerald Denis, Associate Professor of Medicine and Pharmacology, are the recipients of the 2020 Shibley Prostate Cancer Pilot Grant Awards. Dr. Andry will use the \$50,000 award to develop and apply standard operating procedures to dissect *ex vivo* prostates to increase tumor sampling success rate. [Read More](#)

**Katherine Fitzgerald and Sanjay Ram Elected to American Academy of Microbiology**

University of Massachusetts Medical School



Dr. Katherine Fitzgerald *(pictured)*, the Worcester Foundation for Biomedical Research Chair, Professor of Medicine in the Division of Infectious Diseases and Immunology, and Director of the Program in Innate Immunity at UMass Medical School; and Dr. Sanjay Ram, Professor of Medicine, have been elected to the American Academy of Microbiology, the honorific leadership group of the American Society of Microbiology. [Read More](#)

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**Local News**
**Clues to Autism's Origins**

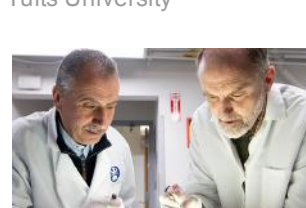
Harvard Medical School



A neuroimaging study by Harvard Medical School researchers based at Massachusetts General Hospital has shown that the brains of young men with autism spectrum disorder (ASD) have low levels of a protein that appears to play a role in inflammation and metabolism. This surprising discovery provides an important new insight into the possible origins of ASD, which affects one in 59 children. [Read More](#)

**New Hope for a Neglected Disease**

Tufts University



Schistosomiasis, caused by parasitic worms carried by freshwater snails, leads to about 280,000 deaths each year, with more than 200 million people infected. The World Health Organization has called for the development of more treatments and new cures for this neglected tropical disease. Recently, two researchers at Cummings School of Veterinary Medicine, Drs. Akram Da'arah and Patrick Skelly *(pictured)*, have made discoveries that may lead to both. [Read More](#)

**Alum for the Ride**

Ragon Institute



Dr. Darrell Irvine, Ragon Steering Committee Member and MIT Professor of Materials Science and Biological Engineering has shown a way to engineer an increased immune response to the vaccine adjuvant aluminum hydroxide, also known as alum, in an HIV vaccine given to animals. Adjuvants like alum are used to heighten the body's response to antigens, the vaccine component that trains the immune system to recognize an infectious disease. [Read More](#)

**Following Blood Stem Cells in the Body Could Yield Better, Safer Treatments**

Boston Children's Hospital



Blood stem cells make all the different kinds of blood and immune cells in our body. Scientists have long been trying to make these cells in the lab and use them to make different blood cell types on demand. Studies from three different labs within the Stem Cell Program at Boston Children's Hospital have provided some important clues into how blood stem cells arise in nature, and how they behave in real time in a living animal. [Read More](#)

**Cambridge Biotech Delivers Coronavirus Vaccine**

Moderna Therapeutics



Moderna, Inc., a clinical stage biotechnology company pioneering messenger RNA (mRNA) therapeutics and vaccines has announced that it has released the first batch of mRNA-1273, the company's vaccine against the novel coronavirus, for human use. Vials of mRNA-1273 have been shipped to the National Institute of Allergy and Infectious Diseases, a part of the National Institutes of Health to be used in the planned Phase 1 study in the U.S. [Read More](#)

**A Chemist Investigates How Proteins Assume their Shape**

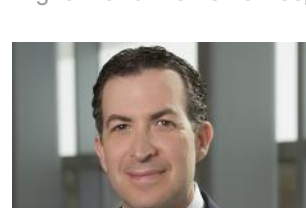
MIT News



Many diseases, including genetic disorders like cystic fibrosis and brittle bone disease, and neurodegenerative diseases like Alzheimer's, are linked to defects in a protein folding process. Dr. Matt Shoulders *(pictured)*, a recently tenured Associate Professor in the Department of Chemistry at MIT, is trying to understand how protein folding happens in human cells and how it goes wrong, in hopes of finding ways to prevent diseases linked to protein misfolding. [Read More](#)

**Discovery May Illuminate a Missing Link between Atherosclerosis and Aging**

Brigham and Women's Hospital



Once dismissed as "junk DNA", roughly 75 percent of the human genome do not code for proteins. But these dark regions of the genome are far from junk — instead, they may hold tantalizing clues about disease states. A team of Brigham investigators led by Dr. Mark Feinberg *(pictured)* of the Division of Cardiovascular Medicine, and an Associate Professor of Medicine at Harvard Medical School has plunged into these regions in search of clues about atherosclerosis. [Read More](#)

**A Case of Reverse Development: Dana-Farber Scientists Solve Long-Debated Puzzle of How the Intestine Heals Itself**

Dana-Farber Cancer Institute



For years, scientists have debated how the intestinal stemcells' (ISCs) re-emergence occurs. Some have held that the intestine keeps a pool of ISCs on reserve – a kind of backup supply – to replenish the cache of front-line ISCs that have been lost. Others have maintained that something more involuted is at work. A new study by Dana-Farber Cancer Institute scientists comes down solidly on the latter option. [Read More](#)

**Artificial Intelligence Yields New Antibiotic**

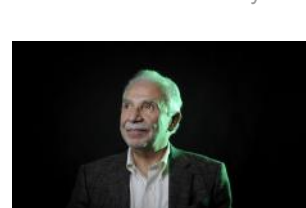
Broad Institute



Using a machine-learning algorithm, researchers at MIT and the Broad Institute of MIT and Harvard have identified a powerful new antibiotic compound. In laboratory tests, the drug killed many of the world's most problematic disease-causing bacteria, including some strains that are resistant to all known antibiotics. It also cleared infections in two different mouse models. [Read More](#)

**Cannabis Will Transform Medicine—Once We Figure Out How to Get Rid of Its Side Effects**

Northeastern University



Tetrahydrocannabinol is just one of the many compounds in a class of molecules known as the cannabinoids, which can also be found within your body even if you don't use marijuana or products derived from it. In a multi-national collaboration, Dr. Alexandros Makryiannis *(pictured)* from Northeastern University has revealed the complete, three-dimensional structure of the body's endocannabinoid receptors. [Read More](#)

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**Upcoming Events in Boston**

March 9 8:00 AM	<b>Environmental Health Risk: Analysis and Applications</b> Harvard T.H. Chan School of Public Health
March 16 8:00 AM	<b>Management and Leadership Skills for Environmental Health and Safety Professionals</b> Harvard T.H. Chan School of Public Health
March 25 5:00 PM	<b>2020 M2D2 \$200K Challenge Pitch-Off</b> University Crossing at UMass Lowell
March 26 8:00 AM	<b>Women on Boards Getting On and Adding Value</b> Harvard T.H. Chan School of Public Health
March 30 8:00 AM	<b>The International Leadership Development Program for Physicians</b> Harvard T.H. Chan School of Public Health

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**STEMCELL Jobs**

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- Associate Product Manager, Mesenchymal & Myogenic (Burnaby, BC)**  
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**Other Science Jobs in Boston**

- Research Scientist I, Kidney Disease Initiative**  
Broad Institute of MIT and Harvard
- (Sr) Director, Ex Vivo Analytical Development**  
Intellia Therapeutics
- Associate Scientist / Scientist, Biopharmaceutical Development**  
Pace Analytical Life Sciences
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