

Publications of the Week

### Bacterial Metabolic State More Accurately Predicts Antibiotic Lethality than Growth Rate

First Author: Allison Lopatkin | Senior Author: James Collins (*pictured*)  
Nature Microbiology | The Wyss Institute, MIT and the Broad Institute



Growth rate and metabolic state of bacteria have been separately shown to affect antibiotic efficacy. However, the two are interrelated as bacterial growth inherently imposes a metabolic burden; thus, determining individual contributions from each is challenging. The authors measured growth and metabolism in parallel across a broad range of coupled and uncoupled conditions to determine their relative contribution to antibiotic lethality. [Abstract](#)

### Epigenetic Signatures of Methylated DNA Cytosine in Alzheimer's Disease

First Author: Irfete Fetahu (*pictured*) | Senior Author: Yujiang Shi  
Science Advances | Dana-Farber Cancer Research Institute, Brigham and Women's Hospital and Harvard Medical School



Alzheimer's disease (AD), a progressive neurodegenerative disorder, is the most common untreatable form of dementia. Identifying molecular biomarkers that allow early detection remains a key challenge in the diagnosis, treatment, and prognostic evaluation of the disease. The authors report a novel experimental and analytical model characterizing epigenetic alterations during AD onset and progression. [Abstract](#)

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Local News

### Harvard's Athlete-Based Next-Generation Probiotics Technology Licensed to FitBiomics

Wyss Institute



The Wyss Institute has announced that its athlete microbiome-based technology will be commercialized by Fitbiomics Inc., a recently formed startup company, to develop highly validated probiotics based on elite athletes' microbiomes, which could improve athletic performance and, conceivably, even overall health. The concept behind the new technology was developed by former Wyss Institute postdoctoral fellow Dr. Jonathan Scheiman (*pictured*). [Read More](#)

### Polypill Holds Promise for Tackling Cardiovascular Disease in Low- and Middle Income Countries

Beth Israel Deaconess Medical Center



Heart attacks and strokes are collectively the leading cause of death in most low- and middle-income countries worldwide. A team of researchers led by Dr. Dhruv Kazi (*pictured*), Associate Director of the Smith Center for Outcomes Research at Beth Israel Deaconess Medical Center, evaluated whether it would be cost-effective to combine several medications into a single "cardiovascular polypill" for patients who have had a previous heart attack or stroke. [Read More](#)

### Vertex Snaps Up Cambridge Diabetes Startup Semma for \$950M

Boston Business Journal



Vertex Pharmaceuticals has struck a deal to acquire local diabetes-focused startup Semma Therapeutics, marking another substantial pivot for the company as CEO Jeff Leiden's tenure comes to a close. Vertex will pay \$950 million for the preclinical Cambridge startup, which is developing a cell therapy for type 1 diabetes, which affects around a million Americans. The deal is expected to close in the fourth quarter of this year. [Read More](#)

### In High-Risk Neuroblastoma, Two Stem Cell Transplants May Be Better than One

Boston Children's Hospital



Chemotherapy followed by an autologous stem cell transplant has been the standard of care for high-risk neuroblastoma. A study led by Dr. Lisa Diller (*pictured*), supports a new, even more intensive approach for most children with high-risk neuroblastoma: giving not one but two autologous stem cell transplants. In a multicenter randomized trial, the double transplant enabled children to survive longer without new or recurrent disease over three years of follow-up. [Read More](#)

### Exposing How Pancreatic Cancer Does Its Dirty Work

Harvard Gazette



Pancreatic cancer is one of the most insidious forms of the disease, because by the time the cancer is discovered, usually it has already spread. Using both *in vitro* and *in vivo* models of pancreatic cancer and vasculature, scientists from the Wyss Institute and Boston University, have revealed the mechanism that destroys and replaces nearby blood vessels, driving malignancy. [Read More](#)

### An Apple a Day: Healthy Foods Matter More than Type of Diet in Reducing Risk of Heart Disease

Harvard Medical School



Researchers at Harvard Medical School and Beth Israel Deaconess Medical Center have examined the effects of three healthy diets emphasizing different macronutrients—carbohydrates, proteins or unsaturated fats—on biomarkers that directly reflect heart injury. Using highly specific tests, the team found that all three diets reduced heart cell damage and inflammation, consistent with improved heart health. [Read More](#)

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### Upcoming Events in Boston

- September 10 11:45 AM **From Bedside to Bench—Streamlined Workflow for Disease-Modeling Using Patient-Specific iPSC-Derived Neurons**  
STEMCELL Cambridge
- September 11 2:30 PM **Career Pathways for Researchers Interested in Government and Regulatory Agencies**  
Harvard Medical School
- September 12 2:30 PM **FRAXA Biotech Games**  
The Common at Cambridge Crossing
- September 13 5:30 PM **Science in Boston Meet and Greet**  
Meadhall
- September 17 10:00 AM **Mass Cytometry Day**  
Merck Research Laboratories

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### STEMCELL Jobs

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- Customer Master Data Specialist (Vancouver, BC)**  
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