

Publications of the Week

Pyridoxal-Phosphate-Dependent Biosynthesis of Aminovaleramide by AvaS in tRNA

First Authors: Jingjing Sun and Junzhou Wu | Senior Author: Peter Dedon *(pictured)*
Nature Chemical Biology | MIT



Recently, aminovaleramide cytidine (ava²C) was discovered at the same tRNA position in several bacteria and plants and shown to support isoleucine decoding and Ile-specific aminoacylation. However, the enzyme catalyzing ava²C was unknown. Here, researchers report that tRNA^{Leu}-aminovaleramidine synthetase catalyzes ava²C biosynthesis in *Pseudomonas aeruginosa* PA14. [Abstract](#) | [Press Release](#)

Maintaining Transcriptome Solubility Constrains mRNA Sequence Composition

First Author: Marco Todisco | Senior Author: Ankur Jain *(pictured)*
Proceedings of the National Academy of Sciences | Whitehead Institute



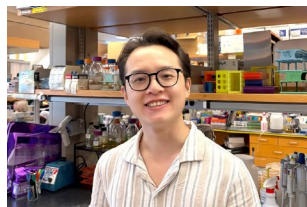
New findings using *Escherichia coli* reveal transcriptome solubility as an underappreciated constraint on sequence evolution and reframe codon choice as influencing not only protein output and regulation but also collective RNA material behavior. Similar signatures in abundant human mRNAs suggest this constraint may extend beyond bacteria. [Abstract](#) | [Press Release](#)

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Awards

Tien Nguyen Awarded NIH Fellowship to Study Bacterial Cell Division

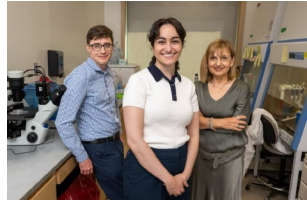
Harvard University Department of Molecular and Cellular Biology



Tien Nguyen *(pictured)*, a fifth-year graduate student, has received an NIH F31 fellowship to investigate how bacteria coordinate the final stages of cell division, research that could uncover new vulnerabilities for future antibiotics. The fellowship provides three years of support for Nguyen's research on cell division in *Escherichia coli*, an important model for understanding Gram-negative bacteria. [Read More](#)

BU Ignition Award Winners' Innovations Could Reduce Knee Pain, Extend Lives of Cancer Patients, and Propel Underwater Robots

The Brink



Recovery after a full knee replacement is a slow process. Boston University biomedical engineer Carolyn Marar *(pictured, center)* is working on a less invasive, drug-free solution—a tiny, injectable implant that could wirelessly dial down the volume from selected nerves, reducing knee pain. Her mission has gained fresh impetus through a 2026 Boston University (BU) Ignition Award. [Read More](#)

Dr. Chao Zhang Awarded \$3.2M NIH Grant

Boston University Chobanian & Avedisian School of Medicine



Approximately 13% of the U.S. population suffers from chronic kidney disease. Dr. Chao Zhang *(pictured)* has received a four-year, \$3.2M R01 grant from the NIH's National Institute of Diabetes and Digestive and Kidney Diseases for his project, "Enhanced AI-Driven Transmission Electron Microscopy Image Analysis for Simplified Kidney Biopsy Pathology Diagnosis." [Read More](#)

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Local News

Discovery Fills a Gap in Understanding, Diagnosing Primary Ciliary Dyskinesia

Harvard Medical School



Primary ciliary dyskinesia (PCD) is a rare disease that can damage the respiratory tract, inner ear, heart, reproductive tract, and other organs. Dr. Alan Brown *(pictured)* and his team have unveiled the detailed structure and composition of an understudied part of the cilium known as the transition zone. This revealed that abnormalities in this zone can play a role in PCD and implicate two new genes in the disease. [Read More](#)

Maintaining Transcriptome Solubility Constrains mRNA Sequence Composition

Mass General Brigham



Ovarian cancer is one of the most challenging gynecologic cancers to detect and treat, in part because symptoms are often subtle, and the disease is frequently diagnosed after it has already spread. Researchers like Drs. Jessica St. Laurent, David Pepin, Alexander Melamed, and Kathryn Terry *(pictured)* are working to change that by studying how ovarian cancer develops. [Read More](#)

Targeting CDK2 Could Boost Cancer Immunotherapy Response

Harvard Medical School



Drugs called CDK2 inhibitors, which are currently being tested as treatments to slow the growth of a narrow range of cancers, may have hidden potential to reduce resistance to immunotherapy across a wide range of cancers. The study, led by Dr. Peter Sicinski *(pictured)*, identifies a previously unrecognized role for CDK2 in shaping a tumor's interaction with the immune system. [Read More](#)

In Conversation with Scientific Advisory Board Member and Evolutionary Biologist Harmit Malik

Whitehead Institute



Whitehead Institute's Scientific Advisory Board (SAB) convenes regularly to learn about the Institute's latest research and engage with its scientists and leadership. By engaging deeply with the Institute's research and community, the SAB members advance a culture of scientific excellence, collaboration, and discovery. One of those advisors is Dr. Harmit Malik *(pictured)*. [Read More](#)

Reducing Plastic, Increasing Impact

Wyss Institute



Laboratories generate up to 5.5 billion kilograms, which is more than 12 billion pounds, of plastic waste each year. In 2021, the Wyss Operations Team began working with a lab recycling company to implement a system that allows researchers to work more sustainably. The Wyss Institute sat down with Lab Safety Advisor Hannah Morrissey *(pictured)* to learn more about the lab recycling program, what makes it unique, what the team sees for its future. [Read More](#)

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 Upcoming Events in Boston

October 2 8:30 AM	2nd Annual AI-Powered Innovation in Protein and Antibody Therapeutics Le Meridien Cambridge
October 4 8:00 AM	Cambridge Science Carnival MIT Museum
October 6 - 7 9:00 AM	FASI 10: Catalyst for a Cure - The Food Allergy Science Innovation Summit Broad Institute
October 13 6:00 PM	An Ocean (Re)Introduction MIT Museum
October 18 - 21 8:00 AM	The Medtech Conference 2026 Boston Convention and Exhibition Center

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 Science Jobs in Boston

Research Associate, Open Rank, Wolfe Lab
UMass Chan Medical School

Associate Scientist III, Parenteral Drug Product Development
Biogen

Associate Scientist I/II, Discovery Neuroscience
Abbvie

Engineer II, CMC Development Operations
Moderna

Research Associate
Beth Israel Deaconess Medical Center

[View 101 Other Science Jobs](#) | [Submit a Job](#)

 [An interview about learning from failure in the life sciences with Drs. Lisa Corwin and Sandhya Krishnan of the REACH lab.](#)

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