

Publications of the Week

Single-Cell Transcriptomic Characterization of Microscopic Colitis

First Authors: Stefan Halvorsen and Molly Thomas | Senior Authors: Alexandra-Chlo  Villani, Slim Sassi, and Hamed Khalili (*pictured*)
Nature Communications | Massachusetts General Hospital, Broad Institute, and Harvard Medical School



Microscopic colitis (MC) is a chronic inflammatory disease of the large intestine and a common cause of chronic diarrhea in older adults. Here, researchers use single-cell RNA sequencing analysis of colonic mucosal tissue to build a cellular and molecular model for MC. Their results show that in MC, there is a substantial expansion of tissue CD8⁺ T cells, likely arising from local expansion following T cell receptor engagement. [Abstract](#)

U1 snRNP Regulates Alternative Promoter Activity by Inhibiting Premature Polyadenylation

First Author: GyeongYun Kim | Senior Author: Ana Fiszbein (*pictured*)
Molecular Cell | Boston University



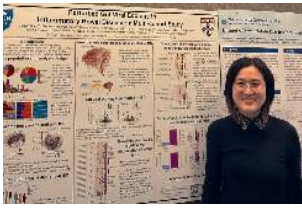
Emerging evidence indicates that splicing factors mediate the close link between transcription and splicing. U1 small nuclear ribonucleoprotein particle (U1 snRNP) not only initiates splicing but also plays a crucial role in preventing premature cleavage and polyadenylation, facilitating long-distance transcriptional elongation. Here, researchers show that U1 snRNP regulates alternative promoter activity in human cells by inhibiting premature polyadenylation. [Abstract](#)

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Awards

2025 Celebration of Science Poster of Distinction Winners: Meet Dr. Jixian Shen

Bench Press



This year's Celebration of Science at Massachusetts General Hospital (MGH) started with a poster session that featured 250+ posters from research staff and trainees. From this impressive group, twelve Poster of Distinction winners were selected, including Dr. Jixian Shen (*pictured*). Dr. Shen is a postdoctoral research fellow studying the role of the gut microbiome in inflammatory bowel disease. [Read More](#)

Dr. Joshua Sanes Elected Fellow of the British Royal Society

Harvard University Department of Molecular and Cellular Biology



Dr. Joshua Sanes (*pictured*), the Jeff C. Tarr Professor of Molecular and Cellular Biology, has been named a Fellow of the British Royal Society, one of the highest honors in science. Dr. Sanes, who was the Founding Director of Harvard's Center for Brain Science, was recognized for his pioneering research on the formation and specificity of synapses—the connections between neurons that are fundamental to brain function. [Read More](#)

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Local News

New Study Aims to Uncover the Genetics of Anorexia and Other Eating Disorders

Broad Institute



A new direct-to-participant effort now underway is giving people the opportunity to participate in the largest and most diverse genetic study of anorexia nervosa and other eating disorders to date. Researchers at the Broad Institute Drs. Ben Neale and Mark Daly are co-leading the study, which allows people across the U.S. to sign up to have their DNA analyzed as part of this effort. [Read More](#)

Researching Immunotherapy Side Effects to Improve Treatment

Mass General Brigham



Cancer research and innovative treatments, like immunotherapy, are helping cancer patients with advanced disease live longer. "Immunotherapy is an entire new era in cancer treatment, one that we're very excited about," says Dr. Kerry Reynolds, a Mass General Cancer Center oncologist. "It's designed to wake up the body's own immune system to attack cancer and control it over time." [Read More](#)

Technique Rapidly Measures Cells' Density, Reflecting Health and Developmental State

MIT News



Measuring the density of a cell can reveal a great deal about the cell's state. Tracking these tiny changes in cells' physical state is difficult to do at a large scale, especially with single-cell resolution, but a team of MIT researchers led by Dr. Scott Manalis (*pictured*) has now found a way to measure cell density quickly and accurately—measuring up to 30,000 cells in a single hour. [Read More](#)

Dana-Farber Genomic Score Predicts Progression to Multiple Myeloma

Dana-Farber Cancer Institute



A new risk assessment score developed by researchers led by Dr. Irene Ghobrial (*pictured*) reveals how multiple myeloma, a form of blood cancer, begins and progresses from precancerous to malignant states by tracing DNA mutations. The score, called an MM-like score, assesses the severity of disease and risk of progression to active cancer, with higher scores indicating faster progression. [Read More](#)

With AI, Researchers Predict the Location of Virtually Any Protein Within a Human Cell

Broad Institute



A protein located in the wrong part of a cell can contribute to several diseases, such as Alzheimer's, cystic fibrosis, and cancer. It is extremely costly and time-consuming to identify proteins' locations manually. A new generation of computational techniques developed by Drs. Fei Chen and Caroline Uhler (*pictured*) seeks to streamline the process using machine-learning models. [Read More](#)

Cell Line Atlas Provides a Crucial Resource for Developing Therapies for Biliary Tract Cancer

Mass General Brigham



Dr. Nabeel El-Bardeesy (*pictured*), the John R. Gallagher III and Katherine A. Gallagher Endowed Chair in Gastrointestinal Cancer Research at Massachusetts General Hospital (MGH), is a co-senior author of a paper published in *Cancer Discovery*, "Generation of a biliary tract cancer cell line atlas identifies molecular subtypes and therapeutic targets." He answers key questions about the new study in a Q&A with MGH. [Read More](#)

Scientists Discover Potential New Targets for Alzheimer's Drugs

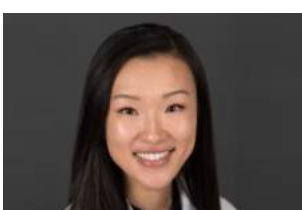
MIT News



By combining information from many large datasets, MIT researchers have identified several new potential targets for treating or preventing Alzheimer's disease. The study, led by Dr. Ernest Fraenkel (*pictured*), revealed genes and cellular pathways that haven't been linked to Alzheimer's before, including one involved in DNA repair. Identifying new drug targets is critical because many of the Alzheimer's drugs that have been developed to this point haven't been as successful as hoped. [Read More](#)

New Genetic Insights Could Change How We Treat, and Talk About, Polycystic Ovary Syndrome

Boston Children's Hospital



Polycystic ovary syndrome (PCOS) has long been viewed as a hormonal disorder affecting women of reproductive age. However, ongoing research led by Dr. Jia Zhu (*pictured*) and her colleagues is changing that. Their most recent findings indicate that PCOS is part of a broader metabolic disorder that affects both men and women—and that manifestations of genetic risk factors for PCOS can be detected as early as childhood. [Read More](#)

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📅 Upcoming Events in Boston

June 9 - 10
8:00 AM

Precision in Drug Discovery & Preclinical Summit Boston
Revere Hotel Boston Common

June 13
4:00 PM

Symposium Series on Emerging Model Organisms with Tessa Montague
Building 46

June 25 - 27
8:00 AM

2025 RNA Therapeutics: From Concept to Clinic
UMass Medical School

June 27
9:00 AM

Koch Institute Symposium 2025
Huntington Hall

August 18 - 21
8:00 AM

The Bioprocessing Summit 2025
Omni Hotel Boston at the Seaport

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💼 Science Jobs in Boston

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AstraZeneca

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Beth Israel Deaconess Medical Center

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Boston University

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Broad Institute

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