

Publications of the Week

CAG Repeat Expansions Create Splicing Acceptor Sites and Produce Aberrant Repeat-Containing RNAs

First Author: Rachel Anderson | Senior Author: Ankur Jain (*pictured*)
Molecular Cell | Whitehead Institute and MIT



Expansions of CAG trinucleotide repeats cause several rare neurodegenerative diseases. These findings provide a molecular explanation for the abnormal translation products observed in CAG trinucleotide repeat expansion disorders and add to the repertoire of mechanisms by which repeat expansion mutations disrupt cellular functions. [Abstract](#) | [Press Release](#)

Improved Immunostaining of Nanostructures and Cells in Human Brain Specimens Through Expansion-Mediated Protein Decrowding

First Author: Pablo Valdes | Senior Authors: Antonio Chiocca and Edward Boyden (*pictured*)
Science Translational Medicine | Brigham and Women's Hospital, Harvard Medical School, McGovern Institute, Koch Institute, MIT, and Howard Hughes Medical Institute



Expansion microscopy variants have been used to separate proteins from each other in preserved biospecimens, improving antibody access to epitopes. Here, researchers present a form of expansion-mediated protein decrowding that may, through improved epitope access for antibodies, render immunohistochemistry more powerful in clinical science and diagnosis. [Abstract](#) | [Press Release](#)

Cryptic Splicing of Stathmin-2 and UNC13A mRNAs Is a Pathological Hallmark of TDP-43-Associated Alzheimer's Disease

First Authors: Ana Rita Agra Almeida Quadros (*pictured*), Zhaozhi Li, and Xue Wang | Senior Authors: Sudeshna Das, Nilüfer Ertekin-Taner, and Clotilde Lagier-Tourenne
Acta Neuropathologica | Massachusetts General Hospital, Harvard Medical School, and the Broad Institute



Nuclear clearance and cytoplasmic accumulations of the RNA-binding protein TDP-43 are pathological hallmarks in almost all patients with amyotrophic lateral sclerosis and up to 50% of patients with dementia and Alzheimer's disease. These results open exciting new avenues to use Stathmin-2 and UNC13A as potential therapeutic targets for this broad range of neurodegenerative conditions. [Abstract](#) | [Press Release](#)

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Awards

Dr. Kim Vanuytsel Receives 2024 Scholar Award from the American Society of Hematology

Boston University Chobanian & Avedisian School of Medicine



Dr. Kim Vanuytsel (*pictured*), Assistant Professor of Medicine, is one of 36 recipients of the American Society of Hematology's 2024 Scholar Awards. She is one of nine investigators recognized as Basic/Translational Research Junior Faculty Scholars. She will receive \$150,000 for her research project, "Improving transplantation outcomes through manipulation of hematopoietic stem cell repopulating potential." [Read More](#)

Nancy Hopkins Awarded the National Academy of Sciences Public Welfare Medal

MIT News



The National Academy of Sciences has awarded MIT biologist Dr. Nancy Hopkins (*pictured*), the Amgen Professor of Biology Emerita, with the 2024 Public Welfare Medal in recognition of "her courageous leadership over three decades to create and ensure equal opportunity for women in science." The award recognizes Hopkins's role in catalyzing and leading MIT's "A Study on the Status of Women Faculty in Science," made public in 1999. [Read More](#)

MIT-Led Team Receives Funding to Pursue New Treatments for Metabolic Disease

MIT News



A team of MIT researchers will lead a \$65.67 million effort, awarded by the U.S. Advanced Research Projects Agency for Health, to develop ingestible devices that may one day be used to treat diabetes, obesity, and other conditions through oral delivery of mRNA. Dr. Giovanni Traverso (*pictured*) is the principal investigator for the project. [Read More](#)

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Local News

UMass Chan Licenses Gene Therapy Technologies for Retinal Diseases to Iveric Bio

UMass Chan Medical School



UMass Chan Medical School licensed the exclusive global rights to develop and commercialize novel adeno-associated virus gene therapy product candidates for the treatment of Stargardt disease and Leber congenital amaurosis type 10 to Iveric Bio. "Iveric Bio is uniquely positioned to take this research to the next stage of development," said Parth Chakrabarti (*pictured*), Executive Vice Chancellor for Innovation and Business Development at UMass Chan. [Read More](#)

Nature Over Nurture: Functional Neuronal Circuits Emerge in the Absence of Developmental Activity

Harvard University Department of Molecular and Cellular Biology.



Understanding how functional neuronal circuits are established during development is a fundamental challenge in neuroscience. In a recent publication in *Nature Communications*, Gregor Schuhknecht (*pictured, left*), Florian Engert, and Dániel Barabási (*right*) show that neuronal activity contributes minimally, if at all, to the development of a visually-guided swimming behavior in larval zebrafish. [Read More](#)

ReiThera Srl, the Ragon Institute, and IAVI Announce Collaboration to Advance Highly Networked T Cell HIV Vaccine Candidate Towards Phase I Clinical Evaluation

Ragon Institute



ReiThera Srl, the Ragon Institute, and the International AIDS Vaccine Initiative (IAVI) are pleased to announce a collaboration to develop a novel HIV vaccine candidate that will be composed of ReiThera's GRAd vector and HIV T cell epitopes identified by the Ragon Institute. This work will be funded by the Bill & Melinda Gates Foundation. [Read More](#)

Using Retinal Images to Predict Risk of Eye and Systemic Diseases

Harvard Medical School



By combining retinal imaging, genetics, and big data, physician-researchers have found that they can estimate how likely a person is to develop eye and systemic diseases in the future. "We showed that retinal images could be used to predict the future risk of both ocular disease and systemic disease," said Dr. Seyedeh Maryam Zekavat (*pictured*), co-first author of the study. [Read More](#)

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Upcoming Events in Boston

- February 13 - 15 **5th RNAi-Based Therapeutics Summit**
8:00 AM | Hilton Boston Back Bay
- February 13 **My Heart in Your Hands**
6:00 PM | Broad Institute
- March 4 **McGovern-MEGIN Symposium: MEGnificent brain discoveries**
1:00 PM | Singleton Auditorium
- March 5 - 7 **GCPRs Targeted Drug Discovery Summit**
8:00 AM | Hilton Boston Back Bay
- March 19 - 21 **6th CKD Drug Development Summit 2024**
8:00 AM | Hilton Boston Back Bay

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Science Jobs in Boston

- Research Technician, Psychological & Brain Sciences**
Boston University
- Science Research Writer**
MIT
- Visting Scientist**
Beth Israel Deaconess Medical Center
- Assistant Professor, Biochemistry**
UMass Boston
- Postdoctoral Fellow, T90/R90 Training Grant**
The Forsyth Institute

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