

Publications of the Week

Allosteric PI3K-Alpha Inhibition Overcomes On-Target Resistance to Orthosteric Inhibitors Mediated by Secondary PIK3CA Mutations

First Author: Andreas Varkaris | Senior Author: Dejan Juric *(pictured)*
Cancer Discovery | Massachusetts General Hospital, Broad Institute, Beth Israel Deaconess Medical Center, and Harvard Medical School



PIK3CA mutations occur in ~8% of cancers, including ~40% of hormone receptor-positive breast cancers, where the PI3K-alpha (PI3Ka)-selective inhibitor alpelisib is FDA-approved in combination with fulvestrant. Although prior studies have identified resistance mechanisms, clinical acquired resistance to PI3Ka inhibitors remains poorly understood. These findings provide insights to guide strategies to overcome resistance in PIK3CA-mutated cancers. [Abstract](#) | [Press Release](#)

Targeting DNA Methylation and B7-H3 in RB1-Deficient and Neuroendocrine Prostate Cancer

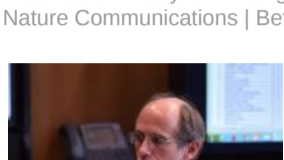
First Author: Yasutaka Yamada | Senior Author: Himisha Beltran *(pictured)*
Science Translational Medicine | Dana-Farber Cancer Institute and Harvard Medical School



Aberrant DNA methylation may be a key driver of prostate cancer lineage plasticity and histologic transformation to neuroendocrine prostate cancer (NEPC). DNA methyltransferases (DNMTs) are highly expressed and DNA methylation is dysregulated in NEPC. Researchers found that deletion of DNMT genes decreases expression of neuroendocrine lineage markers and substantially reduced NEPC tumor development and metastasis *in vivo*. [Abstract](#) | [Press Release](#)

Knockout or Inhibition of USP30 Protects Dopaminergic Neurons in a Parkinson's Disease Mouse Model

First Author: Tracy-Shi Zhang Fang | Senior Author: David Simon *(pictured)*
Nature Communications | Beth Israel Deaconess Medical Center and Harvard Medical School



Mutations in *SNCA*, the gene encoding α -synuclein (α Syn), cause familial Parkinson's disease (PD), and aberrant α Syn is a key pathological hallmark of idiopathic PD. This α -synucleinopathy leads to mitochondrial dysfunction, which may drive dopaminergic neurodegeneration. These data strongly support further study of USP30 inhibition as a potential disease-modifying therapy for PD.

[Abstract](#) | [Press Release](#)

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Awards

Marcus Ruscetti Receives American Cancer Society Award for Prostate Cancer Research

UMass Chan Medical School



Dr. Marcus Ruscetti *(pictured)*, Assistant Professor of Molecular, Cell, and Cancer Biology, received a Research Scholar Grant from the American Cancer Society for his research on senescent cells and their role in tumor progression and immune suppression in prostate cancer. According to the American Cancer Society, one in eight men will be diagnosed with prostate cancer during his lifetime. [Read More](#)

Rewarding Excellence in Open Data

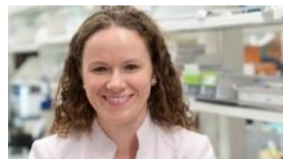
MIT News



The second annual MIT Prize for Open Data, which included a \$2,500 cash prize, was recently awarded to ten individual and group research projects. Presented jointly by the School of Science and the MIT Libraries, the prize highlights the value of open data — research data that is openly accessible and reusable — at the Institute. [Read More](#)

Dana-Farber Physician Zuzana Tothova Receives Doris Duke Foundation Paragon Award for Research Excellence

Dana-Farber Cancer Institute



The Doris Duke Foundation announced that Dr. Zuzana Tothova *(pictured)*, an Investigator in the Department of Medical Oncology and the Division of Hematologic Neoplasia, is the recipient of the Paragon Award for Research Excellence. "Receiving the Paragon award from the Doris Duke Foundation means the world to me. I am extremely honored and very touched by this recognition," said Dr. Tothova. [Read More](#)

Anna Berenson Receives First Place in the PhD on Tap 3MT Competition

Boston University



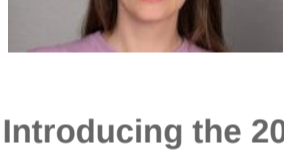
Anna Berenson, a PhD candidate of the Fuxman Bass Lab, received joint first place in the 2023 PhD on Tap Three Minute Thesis (3MT) Competition. Anna's work shows that extensive cooperativity and antagonism between transcription factors greatly affect their binding to gene promoters, and that viral proteins can modify the binding profiles of human transcription factors. [Read More](#)

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Local News

What Human Diseases Can Teach Us About the Immune System

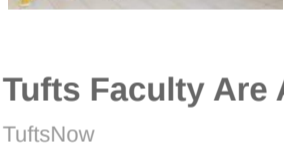
Harvard Medical School



The immune system is a crucial part of our survival, regularly fending off wide-ranging attacks on the body. Each time it mounts a response, it must quickly and carefully orchestrate communication across vast numbers of cells and molecules. Dr. Jennifer Oyler-Yaniv is working to figure out how, exactly, the immune system does this — and when and why it fails. [Read More](#)

Introducing the 2023-2024 Convergence Scholars

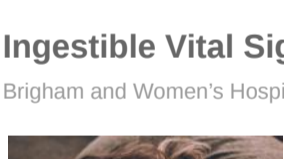
Koch Institute



The Marble Center for Cancer Nanomedicine and the MIT Center for Precision Cancer Medicine have announced the 2023-2024 class of Convergence Scholars. Founded in 2017, the Convergence Scholars Program is designed to enhance the career development of aspiring independent scientists with diverse interests across academia, industry, science communication, and STEM outreach. [Read More](#)

Tufts Faculty Are Among Top Researchers in the World

TuftsNow



Four current Tufts researchers have been named to a ranking of the world's most highly cited researchers. The researchers in the Clarivate 2023 list have a significant impact on the research community, judging by the rate their work is cited by their peers. Named to the list are Drs. David Kaplan *(pictured)*, Renata Micha, Dariush Mozaffarian, and John Wong. [Read More](#)

Ingestible Vital Signs Monitor Shows Promise in First-in-Human Trial

Brigham and Women's Hospital



What if, instead of going into a sleep lab or being connected to monitoring devices, a patient could have their risk of obstructive sleep apnea measured by swallowing a pill? A new collaborative study from Brigham and Women's Hospital, MIT, Celero Systems, and West Virginia University, evaluated a wireless ingestible device that can accurately report vital signs like heart and respiratory rate. The team tested the device in a pilot clinical study of 10 people with sleep apnea. [Read More](#)

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Upcoming Events in Boston

- November 27 8:00 AM **5th Annual Gene Therapy Analytical Development**
Boston Convention and Exhibition Center
- November 28 8:00 AM **6th Lab Asset & Facility Management Summit**
Westin Copley Place
- December 1 9:00 AM **Minisymposium: Deep Learning for Bioimage Analysis**
Broad Institute of MIT and Harvard
- December 2 8:00 AM **Cell Bio 2023**
Boston Convention and Exhibition Center
- December 4 6:00 PM **Biotech Networks Scientific Speed Networking**
Democracy Brewing

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Other Science Jobs in Boston

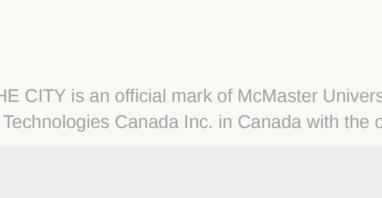
- Senior Research Associate, IHC**
Abcam
- Research Associate II/Senior Research Associate, Molecular and Cell Biology**
eGenesis
- Scientist Educator**
Science from Scientists
- Scientist, Cellular Pharmacology and Modeling**
Takeda
- Scientific Project Lead, Medical Communications**
Avalere Health

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