Volume 3.48: December 13, 2021

Publications of the Week

Microenvironment Drives Cell State, Plasticity, and Drug Response in Pancreatic Cancer

First Authors: Srivatsan Raghavan and Peter Winter | Senior Authors: Brian Wolpin, William Hahn, Andrew Aguirre, and Aleneeds Shalek *(pictured)*
Cell | Broad Institute, Harvard Medical School, Brigham and Women's Hospital, and Dana-Farber Cancer Institute

Prognostically relevant RNA expression states exist in pancreatic ductal adenocarcinoma, but the understanding of their drivers, stability, and relationship to therapeutic response is limited. To examine these attributes systematically, the authors profiled metastatic biopsies and matched organoid models at single-cell resolution. **Abstract**

LSD1 Inhibition Sustains T Cell Invigoration with a Durable Response to PD-1 Blockade

First Author: Yi Lu *(pictured, right)* | Senior Author: Yang Shi *(left)*
Nature Communications | Boston Children's Hospital and Harvard Medical School

Exhausted CD8$^+$ T cells are key targets of immune checkpoint blockade therapy and their ineffective reinvigoration limits the durable benefit in some cancer patients. The authors demonstrate that histone demethylase LSD1 acts to enforce an epigenetic program in progenitor exhausted CD8$^+$ T cells to antagonize the TCF1-mediated progenitor maintenance and to promote terminal differentiation. **Abstract**

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Awards

Dana-Farber's Judy Garber Is Recipient of Brinker Award for Scientific Distinction

Dana-Farber Cancer Institute

Established by Susan G. Komen for the Cure in 1992, the Brinker Award for Scientific Distinction recognizes leading scientists for significant work in advancing research concepts and for clinical application in the fields of breast cancer research, screening, or treatment. Dr. Judy Garber *(pictured)* is being recognized for her trailblazing work and significant contributions in clinical cancer genetics that have shaped the care of people with breast cancer. **Read More**

Awards & Recognitions: December 2021

Harvard Medical School (HMS)

Dr. David Reich *(pictured)*, Professor of Genetics in the Blavatnik Institute at HMS, was named to receive the 2021 Massry Prize from the Keck School of Medicine of University of Southern California. He and two other scientists are being honored for their work in the field of ancient DNA. Together, they revolutionized the study of human evolution and provided deeper insight into who we are and where we came from. **Read More**

Annual MCB Retreat Awards Celebrate Contributions to the Department

Harvard University Department of Molecular and Cellular Biology (MCB)

Graduate student Rachel Lily Terry *(pictured)* of the Paulsson lab was awarded the Peralta Graduate Student Essay Award on the strength of an essay titled, "Dividing up DNA: Minimal plasmid partitioning systems." Terry's essay describes her research on how plasmids partition themselves in a dividing cell. She details her findings on how a bacterial plasmid called R1 ensures that the plasmid persists through generations of daughter cells. **Read More**

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Local News

Gut-Brain Connection in Autism

Harvard Medical School

Many people with autism spectrum disorders also experience unusual gastrointestinal inflammation. Harvard Medical School and MIT researchers, working with mouse models, may have found the missing link between these conditions: Infections during pregnancy can lead to high levels of the inflammatory signaling molecule interleukin-17a which can alter the maternal microbiome in a way that primes the newborn's immune system for future inflammatory attacks. **Read More**

Can the Physics of Bubbles Help Us Understand Microbial Antagonism?

Harvard University Department of Molecular and Cellular Biology

A recent collaboration between Drs. Andrew Murray's *(pictured)* and David Nelson's labs found that microbial antagonism can mirror the formation and dissipation of beer bubbles. The study, led by then postdoc and current Cornell Professor Dr. Andrea Giometto, investigated whether "nucleation theory" can explain the behavior of competing killer yeast strains and was published in the journal *eLife*. **Read More**

Why Zebrafish Can't Tickle Themselves

Harvard University Department of Molecular and Cellular Biology

A team of researchers from the Lichtman and Engert labs, led by then-graduate student Dr. Iris Odstrcil, recently published an investigation into how zebrafish identify self-produced sensory signals. Responses to such self-induced sensory stimuli, often called reafferent stimuli, need to be very different from responses to signals that originate from the outside world, which are commonly known as exafferent stimuli. **Read More**

Meet a Whitehead Postdoc: Jonathan Nelson

Whitehead Institute

Dr. Jonathan Nelson *(pictured)* is a postdoc in Whitehead Institute member Dr. Yukiko Yamashita's lab studying how dividing cells maintain their genomes. He has an interest in understanding how cells make sure that they get everything right when they divide, especially when copying the genome, and then if they do have errors, how they correct that. The Yamashita lab been focusing on the stem cells that make sperm in the fly. **Read More**

Immune System-Stimulating Nanoparticle Could Lead to More Powerful Vaccines

MIT News

A common strategy to make vaccines more powerful is to deliver them along with an adjuvant — a compound that stimulates the immune system to produce a stronger response. Researchers from MIT, the La Jolla Institute for Immunology, and other institutions have now designed a new nanoparticle adjuvant that may be more potent than others now in use. **Read More**

How Some Tissues Can "Breathe" without Oxygen

Whitehead Institute

In a paper published December 2 in the journal *Science*, Whitehead Institute scientists and collaborators led by Dr. Jessica Spinelli *(pictured)* show that when cells are deprived of oxygen, another molecule called fumarate can step in and serve as a terminal electron acceptor to enable mitochondrial function in this environment. **Read More**

Untangling the Immune Response to Vaccines

Broad Institute

Many scientists have recently begun to *closely* examine vaccine-induced immunity, including the lab of Dr. Ramnik Xavier at the Broad Institute. His group is studying biological factors underlying the immune response to the influenza, respiratory syncytial virus, and tuberculosis vaccines. They recently published results of their work on the Bacillus Calmette-Guérin vaccine, which, despite being one of the most commonly used vaccines in the world, remains poorly understood. **Read More**

Bristol Myers Squibb Awards "Golden Tickets" to Promising Biotechs for Residencies at LabCentral, Biolabs@NYULangone and Mission Bay Capital BioLabs

Bristol Myers Squibb

Bristol Myers Squibb Company has announced the winners of the company's 2021 Golden Ticket Contest, including RADD Pharmaceuticals and Rubik Therapeutics in Cambridge. The Golden Ticket contest provides recipient companies with one year of fully equipped, permitted and supported lab space for biomedical research, plus programming and networking opportunities through these incubators to help advance their science and build their companies. **Read More**

Landmark Study into Genetic Disorder Offers Clues into Links between Metabolism and Mental Health

News@Northeastern

Researchers at Northeastern and neighboring colleges say they've made a landmark discovery that takes a deeper look at the metabolic and biochemical origins of a debilitating genetic disease. A recent study investigated a severe neurodevelopmental disorder referred to as 16p11.2 Deletion Syndrome, a condition often associated with autism, intellectual disability, language impairments, seizures, obesity and movement disorders. **Read More**

Nurturing Lab Discoveries

Harvard Medical School (HMS)

Dr. Mike Springer, an Associate Professor of Systems Biology in the Blavatnik Institute at Harvard Medical School, applied for and received a $50,000 pilot grant from the HMS Quadrangle Fund for Advancing and Seeding Translational Research (Q-FASTR) to create a test for COVID-19. It took time, and several months of work, but that initial Q-FASTR funding eventually led to the creation of a new company, Rhinostics, which now produces the nasal swabs and testing kits that Harvard has been using for COVID testing since summer of 2021. **Read More**

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Upcoming Events in Boston

December 14 6:30 PM	**Koch Institute Directors Panel** Online
December 15 10:00 AM	**Neurotech 2021** Online
December 17 4:00 PM	**Special Seminar in Chemical Biology: Dr. Juan Pablo Maianti** MIT & Online
January 14-16 8:00 AM	**Forsyth Postdoctoral Symposium** Forsyth Institute
January 18 7:00 PM	**Using Philanthropy to Spark Government Innovation** Online

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Science Jobs in Boston

Senior Scientist/Principal Scientist, Pharmacology
Blueprint Medicines

Senior Science Writer/Editor, Medical Oncology
Dana-Farber Cancer Institute

Group Leader, Cell Biology and Pharmacology
Broad Institute

Formulation Research Associate
Invaio Sciences

Senior Associate Scientist, BMD Biotherapeutic Production
Pfizer

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