

Publications of the Week

Super-Resolution Labelling with Action-PAINT

First Author: Ninning Liu | Senior Author: Peng Yin *(pictured)*
Nature | Wyss Institute and Harvard Medical School



Recent advances in localization-based super-resolution microscopy have enabled researchers to visualize single molecular features down to individual molecular components (~5 nm), but do not yet allow manipulation of single-molecule targets in a user-prescribed, context-dependent manner. The authors report an 'Action-PAINT', point accumulation for imaging in nanoscale topography) strategy for super-resolution labelling on visualization on single molecules. [Abstract](#)

The Fundamental Role of Chromatin Loop Extrusion in Physiological V(D)J Recombination

First Author: Yu Zhang | Senior Author: Frederick Alt *(pictured)*
Nature | Boston Children's Hospital



The RAG endonuclease initiates *Igh* V(D)J assembly in B cell progenitors. The authors show that the chromosomal orientation of J_H-23RSS programs RC-bound RAG to linearly scan upstream chromatin in the 3' *Igh* subdomain for convergently oriented D-12RSSs and, thereby, to mediate deletional joining of all D segments except RC-based DQ52, which joins by a diffusion-related mechanism. [Abstract](#)

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Awards

Junior Faculty Recognized with Career Development Awards

BU School of Medicine



Career Professorships, variously named for the donors and alumni who fund them, are awarded annually from among those nominated by their deans and colleagues as promising scholars in their fields. Dr. Florian Douam *(pictured)*, a School of Medicine Assistant Professor of Microbiology, will use his Peter Paul Career Development Professorship to advance an innovation that will strike nonexpert ears as science fiction: humanized mice. [Read More](#)

Assistant Biology Professor's \$979K CAREER Grant Will Help Understand Disease Management in Frogs, Human Gut and Lungs

UMass Boston



There's a community of microscopic organisms, called a microbiome, that live on each northern leopard frog in Douglas Woodhams's *(pictured)* lab. The Assistant Professor of Biology has earned a five-year \$979,046 CAREER grant from the National Science Foundation to study how peptides—very small proteins in the mucus that are secreted from the glands in the skin—regulate those microbiomes. [Read More](#)

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Local News

Teenage Sleep Hygiene: Irregular Sleep Schedules Increase Obesity, Cardiometabolic Risk

Harvard Medical School



A new study led by Dr. Elsie Taveras *(pictured)* at MassGeneral Hospital for Children has found that adolescent sleep timing preferences and patterns should be considered risk factors for obesity and cardiometabolic health. But that also means those who lead sedentary lives are at greater risk for heart disease. Those are the main conclusions from a unique study conducted at the Massachusetts General Hospital's Cardiovascular Performance Program. [Read More](#)

Unknowing Choice: In Procedures for Sepsis, Selection of Anesthetic May Matter

Harvard Medical School



Sepsis, an extreme immune response to infection, has no specific treatment and is a leading cause of hospital deaths. As part of their care, patients often undergo imaging procedures and surgery to pinpoint and help eliminate the infection. New preclinical findings in mice suggest that the choice of general anesthetic used for these procedures can influence sepsis outcomes. [Read More](#)

Human Hearts Evolved for Endurance: Study Makes Breakthrough Finding about Heart Structure and Function

MassGeneral News



Major physical changes occurred in the human heart as people shifted from hunting and foraging to farming and modern life. As a result, human hearts are now less "ape-like" and better suited to endurance types of activity. But that also means those who lead sedentary lives are at greater risk for heart disease. Those are the main conclusions from a unique study conducted at the Massachusetts General Hospital's Cardiovascular Performance Program. [Read More](#)

Study Shows Benefit of PARP Inhibitor for Some Ovarian Cancer Patients

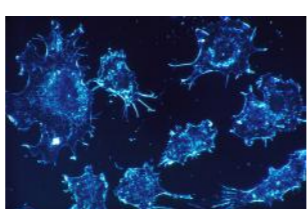
Dana-Farber Cancer Research Institute



For patients with recurrent ovarian cancer that has been brought into remission with platinum-based chemotherapy, treatment with the drug niraparib can significantly prolong the time without symptoms or toxicity, according to a new study led by Ursula Matulonis *(pictured)* at Dana-Farber Cancer Institute. The study analyzed data from 553 participants in the phase III ENGOT-OV16/NOVA trial. [Read More](#)

Mathematical Model Finds the Cancer Mutations That Matter

Broad Institute



Researchers have generated a long list of genetic mutations linked to cancer, but sorting out which ones really drive tumors to grow uncontrollably and which ones don't has been a challenge. A new mathematical model developed by researchers at the Broad Institute of MIT and Harvard and Massachusetts General Hospital could help with this task, by accurately picking out the "driver" mutations from the less important "passenger" ones. [Read More](#)

Babies' EEG Patterns Predict Whether They Will Develop Autism

Boston Children's Hospital



Signs of autism spectrum disorder (ASD) typically start to become apparent only in a child's second year of life or later, but earlier identification could allow children to receive interventions as babies, when they have greater brain plasticity and thus may receive more benefit. A new study shows that periodic EEGs in babies, starting as young as 3 months of age, could allow ASD to be detected in a child's first year, well before they start to show autism-like behaviors. [Read More](#)

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Upcoming Events in Boston

September 26 4:30 PM	Protecting Intellectual Property in Pharmaceuticals Biogen
October 1 8:00 AM	Training Course – Introduction to Downstream Techniques and Bioprocessing GE Healthcare – Fast Trak Training Center
October 2 3:00 PM	CO-OP + CAREER Fair: Hire the best STEAM new talent in Boston! Wentworth Institute of Technology
October 2 6:00 PM	Biorelevant? 2019 Downtown Harvard Club of Boston
October 3 11:30 AM	10th Annual Tufts Neuroscience Symposium & William Shucart Lecture Behrakis Auditorium, Jaharis Building

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Webinar by Dr. Kristina McBurney & Leanna Bedell



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