Resource Summary Report

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University of Massachusetts Medical School Biomedical Imaging Group Core Facility

RRID:SCR_021201
Type: Tool

Proper Citation

University of Massachusetts Medical School Biomedical Imaging Group Core Facility (RRID:SCR_021201)

Resource Information

URL: http://big.umassmed.edu

Proper Citation: University of Massachusetts Medical School Biomedical Imaging Group Core Facility (RRID:SCR_021201)

Description: THIS RESOURCE IS NO LONGER IN SERVICE. Documented on December 11, 2025. Interdisciplinary team of engineers and scientists, representing fields of physics, mathematics, and computer science, that combine their expertise in areas such as microscopy, lasers, optoelectronics, applied mathematics, image and signal processing, computer graphics, computer vision, statistics, software engineering, and biophysics, to develop imaging approaches for cell biology. Pioneers in high-resolution 3D imaging using wide-field fluorescence microscopy together with digital image deconvolution, and image visualization and quantitative analysis techniques, especially as applied to statistical analysis of images to determine co-localization of fluorescence markers inside cells.Research includes development and application of light microscopy and imaging in cell biology and biophysics.Developed TESM microscope that combines Total internal reflection fluorescence (TIRF) with Epi-fluorescence Structured illumination to provide new views of trafficking in near plasma membrane domain of cells.Provides custom-built, ultra-high-speed microscope system for imaging dynamics of intracellular calcium channel events, called calcium sparks, that are being found to regulate expanding array of cellular processes. Provides two photon fluorescence microscope for looking deep inside tissue, completing range from molecule to organism. Areas of ongoing technology research include high-speed, high-resolution imaging of live cells and tissues, novel image processing approaches, high-performance computing, and computer graphics.

Synonyms: Biomedical Imaging Group

Resource Type: access service resource, core facility, service resource

Keywords: USEDit, ABRF, fluorescence microscopy, 3D imaging, light microscopy, live cells imaging, tissue imaging, calcium sparks

Availability: THIS RESOURCE IS NO LONGER IN SERVICE

Resource Name: University of Massachusetts Medical School Biomedical Imaging Group Core Facility

Resource ID: SCR_021201

Alternate IDs: ABRF_1178

Alternate URLs: https://coremarketplace.org/?FacilityID=1178

Record Creation Time: 20220129T080354+0000

Record Last Update: 20260821T194204+0000

Ratings and Alerts

No rating or validation information has been found for University of Massachusetts Medical School Biomedical Imaging Group Core Facility.

No alerts have been found for University of Massachusetts Medical School Biomedical Imaging Group Core Facility.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 16 mentions in open access literature.

Listed below are recent publications. The full list is available at dkNET .

Chen Q, et al. (2025) Systems-level immunomonitoring in children with solid tumors to enable precision medicine. Cell, 188(5), 1425.

Liu S, et al. (2022) Super-Resolution Microscopy for Structural Cell Biology. Annual review of biophysics, 51, 301.

Stuck MW, et al. (2021) Rab34 is necessary for early stages of intracellular ciliogenesis. Current biology : CB, 31(13), 2887.

Wilson H, et al. (2021) Probing DNA-protein interactions using single-molecule diffusivity contrast. Biophysical reports, 1(1), 100009.

Ma H, et al. (2021) Embedded nanometer position tracking based on enhanced phasor analysis. Optics letters, 46(16), 3825.

Sieben C, et al. (2020) Influenza A viruses use multivalent sialic acid clusters for cell binding and receptor activation. PLoS pathogens, 16(7), e1008656.

Katoh K, et al. (2019) Software-Based Three-Dimensional Deconvolution Microscopy of Cytoskeletal Proteins in Cultured Fibroblast Using Open-Source Software and Open Hardware. Journal of imaging, 5(12).

Sieben C, et al. (2018) Multicolor single-particle reconstruction of protein complexes. Nature methods, 15(10), 777.

Vancevska A, et al. (2017) The telomeric DNA damage response occurs in the absence of chromatin decompaction. Genes & development, 31(6), 567.

Prouteau M, et al. (2017) TORC1 organized in inhibited domains (TOROIDs) regulate TORC1 activity. Nature, 550(7675), 265.

Jeremy G, et al. (2016) Single-Molecule Imaging to Characterize the Transport Mechanism of the Nuclear Pore Complex. Methods in molecular biology (Clifton, N.J.), 1431, 17.

Douglass KM, et al. (2016) Super-resolution imaging of multiple cells by optimised flat-field epi-illumination. Nature photonics, 10(11), 705.

Wu S, et al. (2015) Ack1 is a dopamine transporter endocytic brake that rescues a trafficking-dysregulated ADHD coding variant. Proceedings of the National Academy of Sciences of the United States of America, 112(50), 15480.

Almada P, et al. (2015) PALM and STORM: Into large fields and high-throughput microscopy with sCMOS detectors. Methods (San Diego, Calif.), 88, 109.

Rohatgi RA, et al. (2015) Beclin 1 regulates growth factor receptor signaling in breast cancer. Oncogene, 34(42), 5352.

Min J, et al. (2014) 3D high-density localization microscopy using hybrid astigmatic/ biplane imaging and sparse image reconstruction. Biomedical optics express, 5(11), 3935.