Resource Summary Report

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National Center for Microscopy and Imaging Research

RRID:SCR_002655
Type: Tool

Proper Citation

National Center for Microscopy and Imaging Research (RRID:SCR_002655)

Resource Information

URL: http://ncmir.ucsd.edu/

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Description: Biomedical technology research center that develops computer-aided, advanced microscopy for the acquisition of structural and functional data in the dimensional range of 1 nm to 100 um, a range encompassing macromolecules, subcellular structures and cells. Novel specimen-staining methods, imaging instrumentsincluding intermediate high-voltage transmission electron microscopes (IVEMs) and high-speed, large-format laser-scanning light microscopesand computational capabilities are available for addressing mesoscale biological microscopy of proteins and macromolecular complexes in their cellular and tissue environments. These technologies are developed to bridge understanding of biological systems between the gross anatomical and molecular scales and to make these technologies broadly available to biomedical researchers. NCMIR provides expertise, infrastructure, technological development, and an environment in which new information about the 3D ultrastructure of tissues, cells, and macromolecular complexes may be accurately and easily obtained and analyzed. NCMIR fulfills its mission through technology development, collaboration, service, training, and dissemination. It aims to develop preparative methods and analytical approaches to 3D microscopy applicable to neurobiology and cell biology, incorporating equipment and implementing software that expand the analysis of 3D structure. The core research activities in the areas of specimen development, instrument development, and software infrastructures maximize the advantages of higher voltage electron microscopy and correlated light microscopies to make ambitious imaging studies across scales routine, and to facilitate the use of resources by biomedical researchers. NCMIR actively recruits outside users who will not only make use of these resources, but who also will drive technology development and receive training.

Abbreviations: NCMIR

Synonyms: National Center for Microscopy and Imaging Research

Resource Type: biomedical technology research center, training resource

Keywords: microscopy, electron microscopy, electron tomography, 3d imaging, instrumentation, intermediate voltage electron microscopy, light microscopy, specimen preparation, telemicroscopy, image, software, tissue, cell, macromolecular complex, macromolecule, subcellular structure, 3d microscopy, neurobiology, cell biology, 3d structure, imaging technology center

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Alternate IDs: nif-0000-22234, SCR_016627

Record Creation Time: 20220129T080214+0000

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Ratings and Alerts

No rating or validation information has been found for National Center for Microscopy and Imaging Research.

No alerts have been found for National Center for Microscopy and Imaging Research.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 252 mentions in open access literature.

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

Cheng H, et al. (2024) Enhanced mitochondrial buffering prevents Ca2+ overload in naked mole-rat brain. The Journal of physiology, 602(21), 5685.

Bouin A, et al. (2024) New rabies viral resources for multi-scale neural circuit mapping.

Molecular psychiatry, 29(7), 1951.

Marks de Chabris NC, et al. (2023) Short communication: Acute hypoxia does not alter mitochondrial abundance in naked mole-rats. Comparative biochemistry and physiology. Part A, Molecular & integrative physiology, 276, 111343.

Lewis TR, et al. (2023) Photoreceptor disc incisures form as an adaptive mechanism ensuring the completion of disc enclosure. eLife, 12.

Calligaro H, et al. (2023) Ultrastructure of Synaptic Connectivity within Subregions of the Suprachiasmatic Nucleus Revealed by a Genetically Encoded Tag and Serial Blockface Electron Microscopy. eNeuro, 10(8).

Torten G, et al. (2023) Three-Dimensional Ultrastructure of the Normal Rod Photoreceptor Synapse and Degenerative Changes Induced by Retinal Detachment. The Journal of neuroscience : the official journal of the Society for Neuroscience, 43(30), 5468.

Kim S, et al. (2023) TorsinA is essential for the timing and localization of neuronal nuclear pore complex biogenesis. bioRxiv : the preprint server for biology.

Han M, et al. (2023) Spatial mapping of mitochondrial networks and bioenergetics in lung cancer. Nature, 615(7953), 712.

Venkatraman K, et al. (2023) Cristae formation is a mechanical buckling event controlled by the inner membrane lipidome. bioRxiv : the preprint server for biology.

Fang J, et al. (2023) Spatial and functional arrangement of Ebola virus polymerase inside phase-separated viral factories. Nature communications, 14(1), 4159.

Dos Santos C, et al. (2023) Caloric restriction promotes beta cell longevity and delays aging and senescence by enhancing cell identity and homeostasis mechanisms. bioRxiv : the preprint server for biology.

Dos Santos C, et al. (2023) Caloric restriction promotes beta cell longevity and delays aging and senescence by enhancing cell identity and homeostasis mechanisms. Research square.

Spirou GA, et al. (2023) High-resolution volumetric imaging constrains compartmental models to explore synaptic integration and temporal processing by cochlear nucleus globular bushy cells. eLife, 12.

Lewis TR, et al. (2023) Photoreceptor disc incisures form as an adaptive mechanism ensuring the completion of disc enclosure. bioRxiv : the preprint server for biology.

Lev-Ram V, et al. (2023) Do perineuronal nets stabilize the engram of a synaptic circuit? bioRxiv : the preprint server for biology.

Farina S, et al. (2023) Mechanistic multiscale modelling of energy metabolism in human astrocytes reveals the impact of morphology changes in Alzheimer's Disease. PLoS computational biology, 19(9), e1011464.

Adams SR, et al. (2023) Fe-TAMLs as a new class of small molecule peroxidase probes for correlated light and electron microscopy. bioRxiv : the preprint server for biology.

Jeong Y, et al. (2023) Glaucoma-associated Optineurin mutations increase transmitophagy in a vertebrate optic nerve. bioRxiv : the preprint server for biology.

Kaneshiro JM, et al. (2023) Lamin B1 overexpression alters chromatin organization and gene expression. Nucleus (Austin, Tex.), 14(1), 2202548.

Castillon GA, et al. (2023) Proximal Molecular Probe Transfer (PROMPT), a new approach for identifying sites of protein/nucleic acid interaction in cells by correlated light and electron microscopy. bioRxiv : the preprint server for biology.