Microscale Hub- Light Microscopy Hub

1.0 Objective

The light microscopy hub provides technical and scientific support for projects that require light microscopic analysis including live and fixed tissue imaging, as well as advice and practical help on histological procedures.

Please contact the Microscale Hub staff for project requests or further questions (monika.leischner@tum.de).

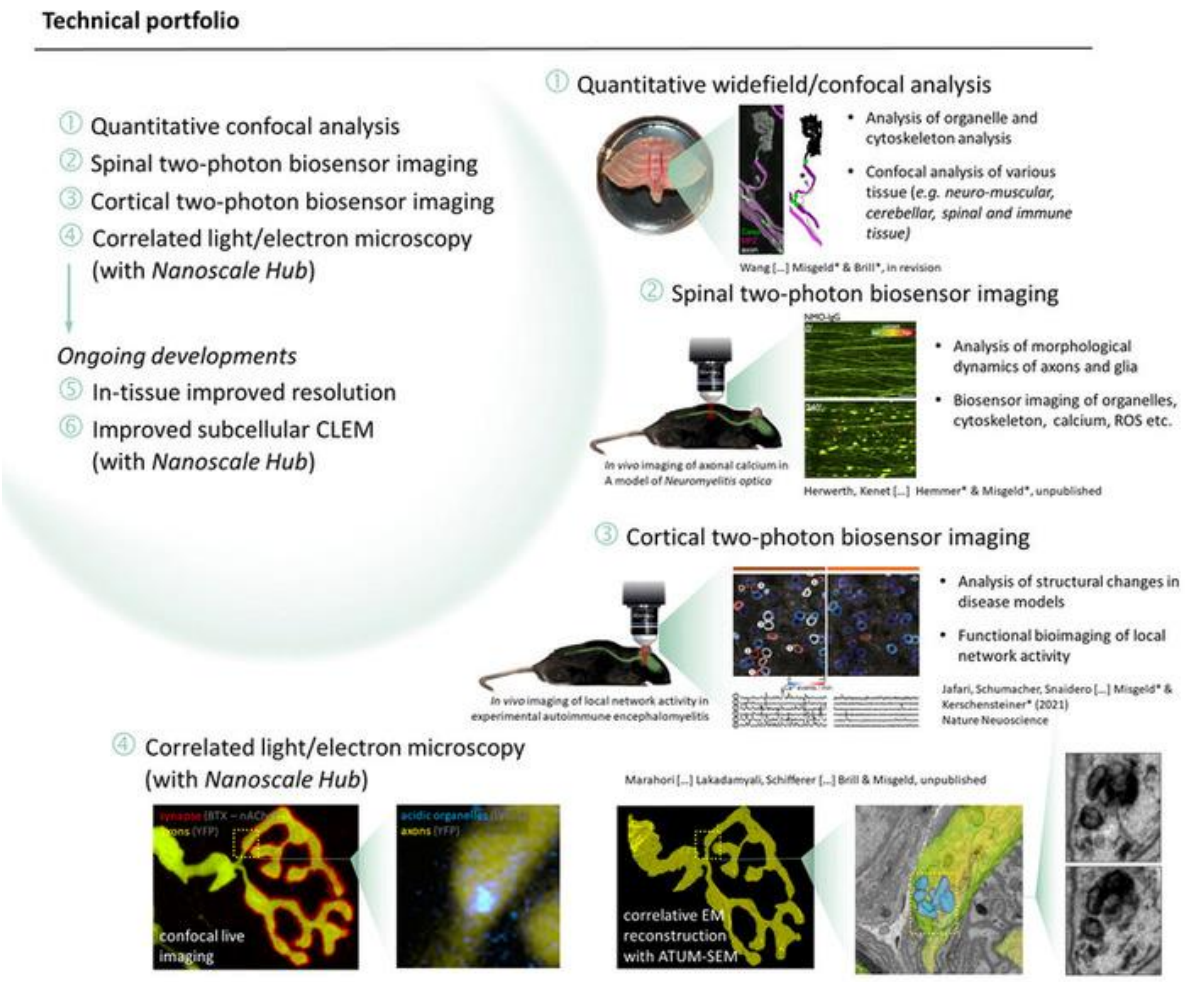
1.1 Organisation

Name	Function	Location	Mail	Phone
Monika Leischner-Brill	Hub associate investigator	TUM Institute of Neuronal Cell Biology	monika.leischner@tum.de	089-4140-3395

SyNergy Coordinators

Name	Institution
Martin Kerschensteiner	Institute of Clinical Neuroimmunology, LMU Klinikum
Arthur Konnerth	TUM Institute of Neuroscience
Thomas Misgeld	TUM Institute of Neuronal Cell Biology

1.2 Technical portfolio

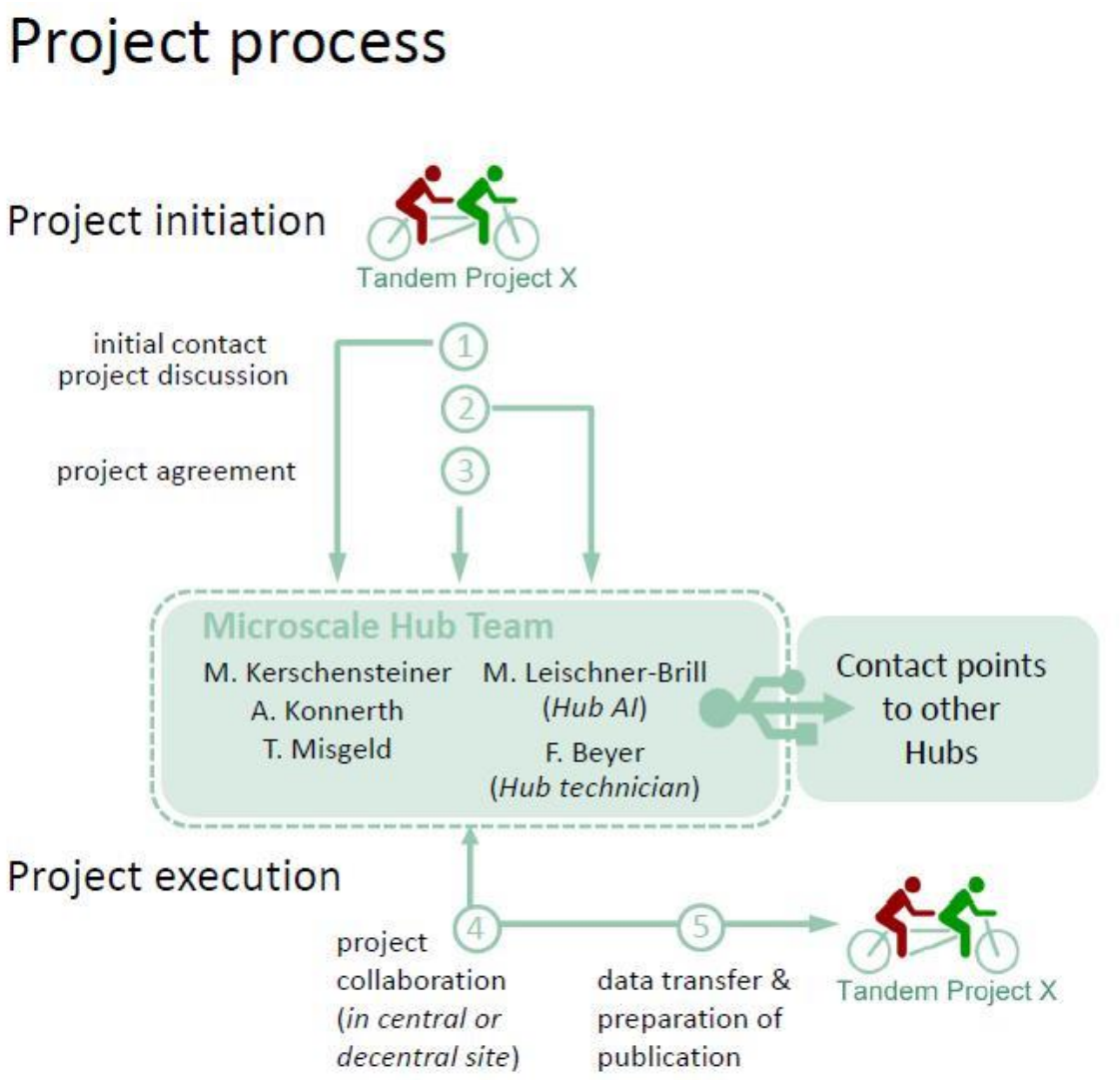


1.3 Project request procedure

For projects and general inquiries, please get in touch via email or phone:

Mail: monika.leischner-brill@tum.de

Phone: 089 4140 3331



1.4 Fees

Budgeted on a per-project-basis (typically only consumables costs).

1.5 Publications

Precision in a sea of profusion: Myelin replacement triggered by single-cell cortical demyelination. Snaidero N., Schifferer M., Mezydlo A., Kerschensteiner M.* & Misgeld T.*Nat Commun. 2020 Sep 29;11(1):4901. (* equal senior authors).

Localized calcium accumulations prime synapses for phagocyte removal in cortical neuroinflammation. Jafari M., Schumacher A.-M., Snaidero N., Neziraj T., Ullrich Gavilanes E.M., Jürgens T., Flórez Weidinger J.D., Schmidt S.S., Beltrán E., Hagan N., Woodworth L., Ofengeim D., Gans J., Wolf F., Kreutzfeldt M., Portugues R., Merkler D., Misgeld T.* & Kerschensteiner M.*Nature Neuroscience in press (* equal senior authors).

Cell type-specific profiling of brain mitochondria reveals functional and molecular diversity. Fecher C., Trovò L., Müller S.A., Snaidero N., Wettmarshausen J., Heink S., Ortiz O., Wagner I., Kühn R., Hartmann J., Karl R.M., Konnerth A., Korn T., Wurst W., Merkler D., Lichtenthaler S.F., Perocchi F., & Misgeld T. Nat Neurosci. 2019 Oct;22(10):1731-1742.

Congenic expression of poly-GA but not poly-PR in mice triggers selective neuron loss and interferon responses found in C9orf72 ALS. LaClair KD, Zhou Q, Michaelsen M, Wefers B, Brill MS, Janjic A, Rathkolb B, Farny D, Cygan M, de Angelis MH, Wurst W, Neumann M, Enard W, Misgeld T, Arzberger T, Edbauer D. Acta Neuropathol. 2020 Aug;140(2):121-142. PMID: 32562018

Calcium Influx through Plasma-Membrane Nanoruptures Drives Axon Degeneration in a Model of Multiple Sclerosis. Witte ME, Schumacher AM, Mahler CF, Bewersdorf JP, Lehmitz J, Scheiter A, Sánchez P, Williams PR, Griesbeck O, Naumann R, Misgeld T*, Kerschensteiner M.*Neuron. 2019 Feb 20;101(4):615-624.e5. PMID: 30686733 (* equal senior authors).

Non-cell-autonomous function of DR6 in Schwann cell proliferation. Colombo A, Hsia HE, Wang M, Kuhn PH, Brill MS, Canevazzi P, Feederle R, Taveggia C, Misgeld T, Lichtenthaler SF. EMBO J. 2018 Apr 3;37(7):e97390. PMID: 29459438

TREM2 deficiency impairs chemotaxis and microglial responses to neuronal injury. Mazaheri F, Snaidero N, Kleinberger G, Madore C, Daria A, Werner G, Krasemann S, Capell A, Trümbach D, Wurst W, Brunner B, Bultmann S, Tahirovic S, Kerschensteiner M, Misgeld T, Butovsky O, Haass C. EMBO Rep. 2017 Jul;18(7):1186-1198. PMID: 28483841

Trans-presentation of IL-6 by dendritic cells is required for the priming of pathogenic TH17 cells. Heink S., Yogev N., Garbers C., Gasperi C., Herwerth M., Husterer V, Bartsch H.S., Sotlar K., Krebs S., Blum H., Hemmer B., Misgeld T., Hidalgo J., Oukka M., Rose-John S., Schmidt-Supprian M., Waisman A. & Korn T. Nature Immunology, 2017; 18, p74-85.

Branch-Specific Microtubule Destabilization Mediates Axon Branch Loss during Neuromuscular Synapse Elimination. Brill MS, Kleele T, Ruschkies L, Wang M, Marahori NA, Reuter MS, Hausrat TJ, Weigand E, Fisher M, Ahles A, Engelhardt S, Bishop DL, Kneussel M, Misgeld T. Neuron. 2016 Nov 23;92(4):845-856. PMID: 27773584

In vivo imaging reveals rapid astrocyte depletion and axon damage in a model of neuromyelitis optica-related pathology. Herwerth M, Kalluri SR, Srivastava R, Kleele T, Kenet S, Illes Z, Merkler D, Bennett JL, Misgeld T*, Hemmer B.* Ann Neurol. 2016 May;79(5):794-805. PMID: 26946517 (* equal senior authors).

Myelinosome formation represents an early stage of oligodendrocyte damage in multiple sclerosis and its animal model. Romanelli E, Merkler D, Mezydlo A, Weil MT, Weber MS, Nikić I, Potz S, Meinl E, Matznick FE, Kreutzfeldt M, Ghanem A, Conzelmann KK, Metz I, Brück W, Routh M, Simons M, Bishop D, Misgeld T*, Kerschensteiner M.* Nat Commun. 2016 Nov 16;7:13275. PMID: 27848954 (* equal senior authors).

A recoverable state of axon injury persists for hours after spinal cord contusion in vivo. Williams PR, Marincu BN, Sorbara CD, Mahler CF, Schumacher AM, Griesbeck O, Kerschensteiner M*, Misgeld T.* Nat Commun. 2014 Dec 16;5:5683. PMID: 25511170 (* equal senior authors).

Multi-parametric optical analysis of mitochondrial redox signals during neuronal physiology and pathology in vivo. Breckwoldt M, Pfister F, Bradley P, Marinkovic P, Williams P, Brill MS, Plomer B, Schmalz A, Naumann T, Godinho L, Griesbeck O, Schwarzlander M, Bareyre F, Dick T, Misgeld T*, Kerschensteiner M.* Nat Med. 2014 May;20(5):555-60. (* equal senior authors).

Pervasive axonal transport deficits in multiple sclerosis models. Sorbara CD, Wagner NE, Ladwig A, Nikić I, Merkler D, Kleele T, Marinković P, Naumann R, Godinho L, Bareyre FM, Bishop D, Misgeld T*, Kerschensteiner M.* Neuron. 2014 Dec 17;84(6):1183-90. PMID: 25433639 (* equal senior authors).

An assay to image neuronal microtubule dynamics in mice. Kleele T, Marinković P, Williams PR, Stern S, Weigand EE, Engerer P, Naumann R, Hartmann J, Karl RM, Bradke F, Bishop D, Herms J, Konnerth A, Kerschensteiner M, Godinho L, Misgeld T. Nat Commun. 2014 Sep 12;5:4827. PMID: 25219969

STIM1 controls neuronal Ca^{2+} signaling, mGluR1-dependent synaptic transmission, and cerebellar motor behavior. Hartmann J, Karl RM, Alexander RP, Adelsberger H, Brill MS, Rühlmann C, Ansel A, Sakimura K, Baba Y, Kurosaki T, Misgeld T, Konnerth A. Neuron. 2014 May 7;82(3):635-44.