



## Selected references

# Publications featuring the UltraMicroscope

Adori, C. *et al.* (2021) Disorganization and degeneration of liver sympathetic innervations in nonalcoholic fatty liver disease revealed by 3D imaging. *Sci. Adv.* 7: eabg5733.  
<https://dx.doi.org/10.1126/sciadv.abg5733>

Alkaslasi, M.R. *et al.* (2021) Single nucleus RNA-sequencing defines unexpected diversity of cholinergic neuron types in the adult mouse spinal cord. *Nat. Commun.* 12: 2471.  
<https://dx.doi.org/10.1038/s41467-021-22691-2>

Berghoff, S.A. *et al.* (2021) Microglia facilitate repair of demyelinated lesions via post-squalene sterol synthesis. *Nat. Neurosci.* 24: 47–60.  
<https://dx.doi.org/10.1038/s41593-020-00757-6>

Borland, D. *et al.* (2021) Segmentor: a tool for manual refinement of 3D microscopy annotations. *BMC Bioinformatics.* 22: 260.  
<https://dx.doi.org/10.1186/s12859-021-04202-8>

Butt, U.J. *et al.* (2021) CaMKII $\alpha$  expressing neurons to report activity-related endogenous hypoxia upon motor-cognitive challenge. *Int. J. Mol. Sci.* 22: 3164.  
<https://dx.doi.org/10.3390/ijms22063164>

Collart, C. *et al.* (2021) The migratory pathways of the cells that form the endocardium, dorsal aortae, and head vasculature in the mouse embryo. *BMC Dev. Biol.* 21: 8.  
<https://dx.doi.org/10.1186/s12861-021-00239-3>

Frétaud, M. *et al.* (2021) New look at RSV infection: tissue clearing and 3D imaging of the entire mouse lung at cellular resolution. *Viruses.* 13: 201.  
<https://dx.doi.org/10.3390/v13020201>

Geng, J. *et al.* (2021) 3D microscopy and deep learning reveal the heterogeneity of crown-like structure microenvironments in intact adipose tissue. *Sci. Adv.* 7: eabe2480.  
<https://dx.doi.org/10.1126/sciadv.abe2480>

Gregorius, J. *et al.* (2021) Small extracellular vesicles obtained from hypoxic mesenchymal stromal cells have unique characteristics that promote cerebral angiogenesis, brain remodeling and neurological recovery after focal cerebral

ischemia in mice. *Basic Res. Cardiol.* 116: 40.  
<https://dx.doi.org/10.1007/s00395-021-00881-9>

Gruber, T. *et al.* (2021) Obesity-associated hyperleptinemia alters the gliovascular interface of the hypothalamus to promote hypertension. *Cell Metab.* 33: 1155–1170.e10.  
<https://dx.doi.org/10.1016/j.cmet.2021.04.007>

Hahn, A. *et al.* (2021) Large-scale characterization of the microvascular geometry in development and disease by tissue clearing and quantitative ultramicroscopy. *J Cereb. Blood Flow Metab.* 41: 1536–1546.  
<https://dx.doi.org/10.1177/0271678X20961854>

Hankeova, S. *et al.* (2021) DUCT reveals architectural mechanisms contributing to bile duct recovery in a mouse model for Alagille syndrome. *Elife* 10: e60916.  
<https://dx.doi.org/10.7554/eLife.60916>

Hansen, H.H. *et al.* (2021) Whole-brain activation signatures of weight-lowering drugs. *Mol. Metab.* 47: 101171.  
<https://dx.doi.org/10.1016/j.molmet.2021.101171>

Honeycutt, S.E. and O'Brien, L.L. (2021) Injection of Evans blue dye to fluorescently label and image intact vasculature. *Biotechniques* 70: 181–185.  
<https://dx.doi.org/10.2144/btn-2020-0152>

Huesing, C. *et al.* (2021) Sympathetic innervation of inguinal white adipose tissue in the mouse. *J. Comp. Neurol.* 529: 1465–1485.  
<https://dx.doi.org/10.1002/cne.25031>

Jeucken, K.C.M. *et al.* (2021) A straightforward method for 3D visualization of B cell clusters and high endothelial venules in lymph nodes highlights differential roles of TNFR1 and -II. *Front. Immunol.* 12: 699336.  
<https://dx.doi.org/10.3389/fimmu.2021.699336>

Kirschnick, N. *et al.* (2021) Rapid methods for the evaluation of fluorescent reporters in tissue clearing and the segmentation of large vascular structures. *iScience* 24: 102650.  
<https://dx.doi.org/10.1016/j.isci.2021.102650>

- Kong, C. *et al.* (2021) Multiscale and multimodal optical imaging of the ultrastructure of human liver biopsies. *Front. Physiol.* 12: 637136.  
<https://dx.doi.org/10.3389/fphys.2021.637136>
- Madrigal, M.P. and Jurado, S. (2021) Specification of oxytocinergic and vasopressinergic circuits in the developing mouse brain. *Commun. Biol.* 4: 586.  
<https://dx.doi.org/10.1038/s42003-021-02110-4>
- Mohr, H. *et al.* (2021) Mutation of the cell cycle regulator p27kip1 drives pseudohypoxic pheochromocytoma development. *Cancers (Basel)* 13: 126.  
<https://dx.doi.org/10.3390/cancers13010126>
- Roostalu, U. *et al.* (2021) Effect of captopril on post-infarction remodelling visualized by light sheet microscopy and echocardiography. *Sci. Rep.* 11: 5241.  
<https://dx.doi.org/10.1038/s41598-021-84812-7>
- Smith, A.C.W. *et al.* (2021) Opposing roles for striatonigral and striatopallidal neurons in dorsolateral striatum in consolidating new instrumental actions. *Nat. Commun.* 12: 5121.  
<https://dx.doi.org/10.1038/s41467-021-25460-3>
- Song, E. *et al.* (2021) Neuroinvasion of SARS-CoV-2 in human and mouse brain. *J. Exp. Med.* 218: e20202135.  
<https://dx.doi.org/10.1084/jem.20202135>
- Taranda, J. and Turcan, S. (2021) 3D whole-brain imaging approaches to study brain tumors. *Cancers (Basel)* 13: 1897.  
<https://dx.doi.org/10.3390/cancers13081897>
- Toulemonde, P. *et al.* (2021) Evaluation of the efficacy of dexamethasone-eluting electrode array on the post-implant cochlear fibrotic reaction by three-dimensional immunofluorescence analysis in mongolian gerbil cochlea. *J. Clin. Med.* 10: 3315.  
<https://dx.doi.org/10.3390/jcm10153315>
- Vachez, Y.M. *et al.* (2021) Ventral arkypallidal neurons inhibit accumbal firing to promote reward consumption. *Nat. Neurosci.* 24: 379–390.  
<https://dx.doi.org/10.1038/s41593-020-00772-7>
- Van Battum, E. *et al.* (2021) Plexin-B2 controls the timing of differentiation and the motility of cerebellar granule neurons. *Elife* 10: e60554.  
<https://dx.doi.org/10.7554/eLife.60554>
- Wang, X. *et al.* (2021) Type 2 immunity induced by bladder extracellular matrix enhances corneal wound healing. *Sci. Adv.* 7: eabe2635.  
<https://dx.doi.org/10.1126/sciadv.abe2635>
- Zaack, L.M. *et al.* (2021) Light sheet microscopy-assisted 3D analysis of SARS-CoV-2 infection in the respiratory tract of the ferret model. *Viruses.* 13: 529.  
<https://dx.doi.org/10.3390/v13030529>
- Azevedo, H. *et al.* (2020) Brain-wide mapping of c-fos expression in the single prolonged stress model and the effects of pretreatment with ACH-000029 or prazosin. *Neurobiol. Stress.* 13: 100226.  
<https://dx.doi.org/10.1016%2Fj.ynstr.2020.100226>
- Blutke, A. *et al.* (2020) Light sheet fluorescence microscopy guided MALDI-imaging mass spectrometry of cleared tissue samples. *Sci. Rep.* 10: 14461  
<https://dx.doi.org/10.1038%2Fs41598-020-71465-1>
- Buglak, N. E. *et al.* (2020) Light sheet fluorescence microscopy as a new method for unbiased three-dimensional analysis of vascular injury. *Cardiovasc. Res. cvaa037*: Epub ahead of print, Feb. 13.  
<https://doi.org/10.1093/cvr/cvaa037>
- Hahn, A. *et al.* (2020) Gibbs point field model quantifies disorder in microvasculature of U87-glioblastoma. *J. Theor. Biol.* 494: 110230.  
<https://doi.org/10.1016/j.jtbi.2020.110230>
- Godefroy, D. *et al.* (2020) Three-dimensional mapping of tyrosine hydroxylase in the transparent brain and adrenal of prenatal and pre-weaning mice: Comprehensive methodological flowchart and quantitative aspects of 3D mapping. *J. Neurosci. Methods* 335: 108596.  
<https://doi.org/10.1016/j.jneumeth.2020.108596>
- Kimbrough, A. *et al.* (2020) Brain-wide functional architecture remodeling by alcohol dependence and abstinence. *Proc. Natl. Acad. Sci. USA.* 117: 2149–2159.  
<https://doi.org/10.1073/pnas.1909915117>
- Ghoubay, D. *et al.* (2020) Corneal stromal stem cells restore transparency after N2 injury in mice. *Stem Cells Transl. Med.* 9: 917–935.  
<https://dx.doi.org/10.1002%2Fscmt.19-0306>
- Houssari, M. *et al.* (2020) Lymphatic and immune cell cross-talk regulates cardiac recovery after experimental myocardial infarction. *Arterioscler. Thromb. Vasc. Biol.* 40: 1722–1737.  
<https://dx.doi.org/10.1161%2FATVBAHA.120.314370>
- Kang, G.-Y. *et al.* (2020) 3D Imaging of the transparent Mycobacterium tuberculosis-infected lung verifies the localization of innate immune cells with granuloma. *Front. Cell Infect. Microbiol.* 10: 226.  
<https://dx.doi.org/10.3389%2Ffcimb.2020.00226>
- Kirst, C. *et al.* (2020) Mapping the fine-scale organization and plasticity of the brain vasculature. *Cell* 180: 780–795.e25.  
<https://doi.org/10.1016/j.cell.2020.01.028>
- Kullmann, J. A. *et al.* (2020) Oxygen tension and the VHL-Hif1 $\alpha$  pathway determine onset of neuronal polarization and cerebellar germinal zone exit. *Neuron*: S0896-6273(20)30148-3: Epub ahead of print, Mar 16.  
<https://doi.org/10.1016/j.neuron.2020.02.025>
- Merz, S. F. *et al.* (2020) High-resolution 3-D imaging for precise staging in malignant melanoma. *MedRxiv*, 2020  
<https://doi.org/10.1101/2020.07.22.20159103>
- Nie, J. *et al.* (2020) Fast, 3D isotropic imaging of whole mouse brain using multiangle-resolved subvoxel SPIM. *Adv. Sci. (Weinh)* 7: 1901891.  
<https://doi.org/10.1002/advs.201901891>
- Nimmo, J. *et al.* (2020) Peri-arterial pathways for clearance of  $\alpha$ -synuclein and tau from the brain: Implications for the pathogenesis of dementias and for immunotherapy. *Alzheimers Dement.* 12: e12070.  
<https://doi.org/10.1002/dad2.12070>
- Sjöstedt, E. *et al.* (2020) An atlas of the protein-coding genes in the human, pig, and mouse brain. *Science* 367: eaay5947.  
<https://doi.org/10.1126/science.aay5947>

- Todorov, M. I. *et al.* (2020) Machine learning analysis of whole mouse brain vasculature. *Nat. Methods*. 17: 442–449. <https://doi.org/10.1038/s41592-020-0792-1>
- Ueda, H. R. *et al.* (2020) Tissue clearing and its applications in neuroscience. *Nat. Rev. Neurosci.* 21: 61–79. <https://doi.org/10.1038/s41583-019-0250-1>
- Wang, X. *et al.* (2020) An ocular glymphatic clearance system removes  $\beta$ -amyloid from the rodent eye. *Sci. Transl. Med.* 12: eaaw3210. <https://dx.doi.org/10.1126%2Fscitranslmed.aaw3210>
- Zakariassen, H. L. *et al.* (2020) Salmon calcitonin distributes into the arcuate nucleus to a subset of NPY neurons in mice. *Neuropharmacology* 167: 107987. <https://doi.org/10.1016/j.neuropharm.2020.107987>
- Zhao, S. *et al.* (2020) Cellular and molecular probing of intact human organs. *Cell* 180:796–812.e19. <https://doi.org/10.1016/j.cell.2020.01.030>
- Claser, C. *et al.* (2019) Lung endothelial cell antigen cross-presentation to CD8<sup>+</sup> T cells drives malaria-associated lung injury. *Nat. Commun.* 10: 4241. <https://doi.org/10.1038/s41467-019-12017-8>
- Culemann, S. *et al.* (2019) Locally renewing resident synovial macrophages provide a protective barrier for the joint. *Nature* 572: 670–675. <https://doi.org/10.1038/s41586-019-1471-1>
- Esterházy, D. *et al.* (2019) Compartmentalized gut lymph node drainage dictates adaptive immune responses. *Nature* 569: 126–130. <https://doi.org/10.1038/s41586-019-1125-3>
- Hong, S.-M. *et al.* (2019) Three-dimensional visualization of cleared human pancreas cancer reveals that sustained epithelial-to-mesenchymal transition is not required for venous invasion. *Mod. Pathol.* 33: 639–647. <https://doi.org/10.1038/s41379-019-0409-3>
- Levy, R. B. *et al.* (2019) Circuit asymmetries underlie functional lateralization in the mouse auditory cortex. *Nat. Commun.* 10: 2783. <https://doi.org/10.1038/s41467-019-10690-3>
- Pan, C. *et al.* (2019) Deep learning reveals cancer metastasis and therapeutic antibody targeting in the entire body. *Cell* 179:1661–1676.e19. <https://doi.org/10.1016/j.cell.2019.11.013>
- Schmid, B. *et al.* (2019) 3Dscript: animating 3D/4D microscopy data using a natural-language-based syntax. *Nat. Methods*. 16: 278–280. <https://doi.org/10.1038/s41592-019-0359-1>
- Wan, Y. *et al.* (2019) Light-sheet microscopy and its potential for understanding developmental processes. *Annu. Rev. Cell Dev. Biol.* 35: 655–681. <https://doi.org/10.1146/annurev-cellbio-100818-125311>
- Lozovaya, N. *et al.* (2018) GABAergic inhibition in dual-transmission cholinergic and GABAergic striatal interneurons is abolished in Parkinson disease. *Nat. Commun.* 9: 1422. <https://doi.org/10.1038/s41467-018-03802-y>
- Belle, M. *et al.* (2017) Tridimensional visualization and analysis of early human development. *Cell* 169: 161–173.e12. <https://doi.org/10.1016/j.cell.2017.03.008>
- Zundler, S. *et al.* (2017) Three-dimensional cross-sectional light-sheet microscopy imaging of the inflamed mouse gut. *Gastroenterology* 153: 898–900. <https://doi.org/10.1053/j.gastro.2017.07.022>
- Fu, H. *et al.* (2016) 3D visualization of the temporal and spatial spread of tau pathology reveals extensive sites of tau accumulation associated with neuronal loss and recognition memory deficit in aged tau transgenic mice. *PLoS One* 11: e0159463. <https://doi.org/10.1371/journal.pone.0159463>
- Pan, C. *et al.* (2016) Shrinkage-mediated imaging of entire organs and organisms using uDISCO. *Nat. Methods* 13: 859–867. <https://doi.org/10.1038/nmeth.3964>
- Renier, N. *et al.* (2016) Mapping of brain activity by automated volume analysis of immediate early genes. *Cell* 165: 1789–1802. <https://doi.org/10.1016/j.cell.2016.05.007>
- Ye, L. *et al.* (2016) Wiring and molecular features of prefrontal ensembles representing distinct experiences. *Cell* 165: 1776–1788. <https://doi.org/10.1016/j.cell.2016.05.010>
- Epp, J. R. *et al.* (2015) Optimization of CLARITY for clearing whole-brain and other intact organs. *eNeuro* 2: ENEURO.0022-15.2015. <https://doi.org/10.1523/ENEURO.0022-15.2015>
- Soderblom, C. *et al.* (2015) 3D imaging of axons in transparent spinal cords from rodents and nonhuman primates. *eNeuro* 2: ENEURO.0001-15.2015. <https://doi.org/10.1523/ENEURO.0001-15.2015>
- Susaki, E.A. *et al.* (2015) Advanced CUBIC protocols for whole-brain and whole-body clearing and imaging. *Nat. Protoc.* 10: 1709–1727. <https://doi.org/10.1038/nprot.2015.085>
- Renier, N. *et al.* (2014) iDISCO: A simple, rapid method to immunolabel large tissue samples for volume imaging. *Cell* 159: 896–910. <https://doi.org/10.1016/j.cell.2014.10.010>
- Susaki, E. A. *et al.* (2014) Whole-brain imaging with single-cell resolution using chemical cocktails and computational analysis. *Cell* 157: 726–739. <https://doi.org/10.1016/j.cell.2014.03.042>
- Tainaka, K. *et al.* (2014) Whole-body imaging with single-cell resolution by tissue decolorization. *Cell* 159: 911–924. <https://doi.org/10.1016/j.cell.2014.10.034>

Hägerling, R. *et al.* (2013) A novel multistep mechanism for initial lymphangiogenesis in mouse embryos based on ultramicroscopy. *EMBO J.* 32: 629–644.  
<https://doi.org/10.1038/emboj.2012.340>

Ertürk, A. *et al.* (2012) Three-dimensional imaging of solvent-cleared organs using 3DISCO. *Nat. Protoc.* 7: 1983–1995.  
<https://doi.org/10.1038/nprot.2012.119>



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