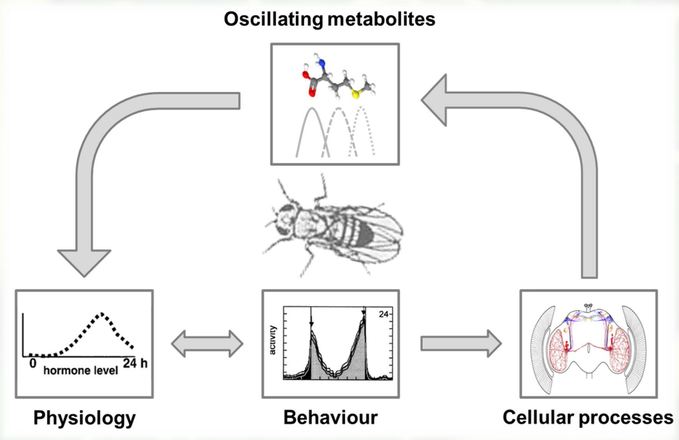
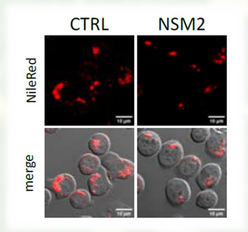
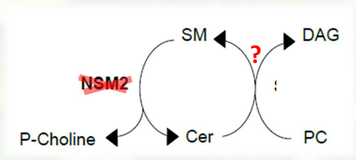
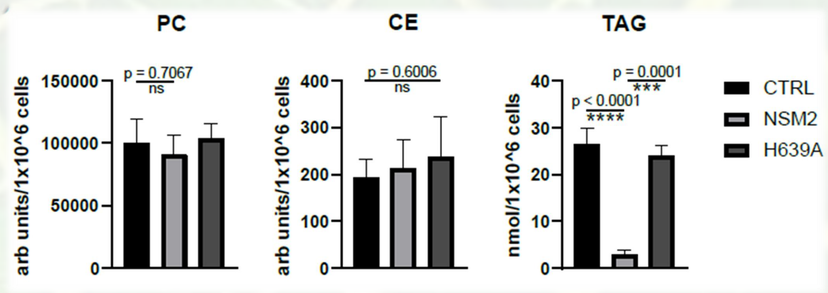
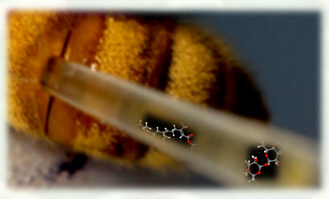
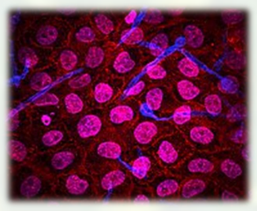
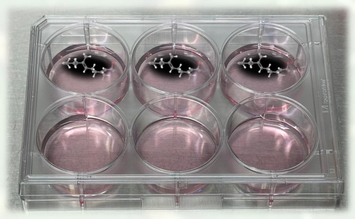
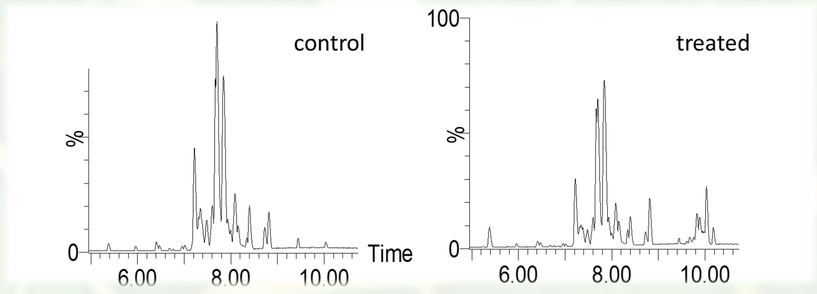
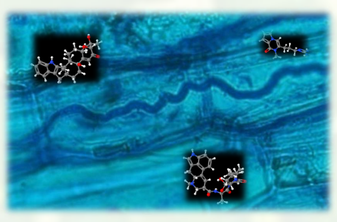
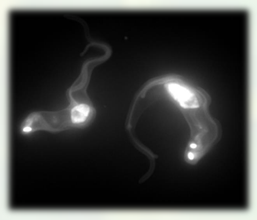
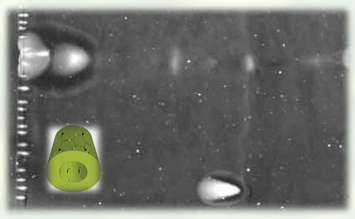
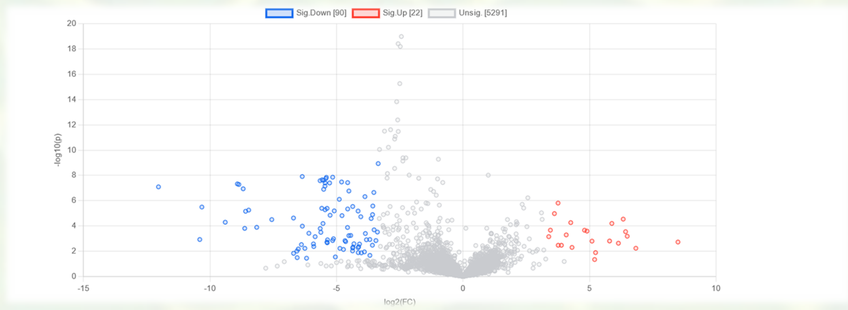
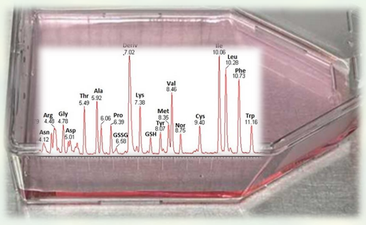
Metabolomics Core Unit

JvSl-outgoing collaborations 2020 – 2023
within University of Würzburg

We perform LC-MS based untargeted and targeted metabolomics in close collaboration with our partners.
Upon request, we jointly decide on the metabolomic approach and experimental design to be used.
If possible, we train PhD or MSc students of the collaboration partner so that they can carry out the analysis with us in our laboratory. This way we can react quickly and change the method if necessary.

Species	Cooperation	Research Question	Results
Drosophila melanogaster 	**Neurobiology and Genetics** **C. Wegener** K.M. Amatobi A.G. Özbek-Ünal S. Schäbler		Schäbler S., Amatobi K.M., Horn M., Rieger D., Helfrich-Förster C., Mueller M.J., Wegener C., Fekete A. (2020) Loss of function in the Drosophila clock gene period results in altered intermediary lipid metabolism and increased susceptibility to starvation. Cellular and Molecular Life Sciences, 77: 4939. Pauls D., Selcho M., Räderscheidt J., Amatobi K.M., Fekete A., Krischke M., Hermann-Luibl Ch., Ünal A.G., Ehmann N., Itskov P.M., Kittel R.J., Helfrich-Förster Ch., Kühnlein R.P., Mueller M.J., Wegener Ch. (2021) Endocrine fine-tuning of daily locomotor activity patterns under non-starving conditions in Drosophila. Current Biology, 31: 4076. Wegener C., Amatobi K.M., Özbek-Ünal A.G., Fekete A. (2023) Circadian control of lipid metabolism. Insect Lipid Metabolism, Springer Nature (in press). Amatobi K.M., Özbek-Ünal A.G., Schäbler S., Deppisch P., Helfrich-Förster C, Mueller M.J., Wegener C., Fekete A. (2023) The circadian clock is required for rhythmic lipid transport in Drosophila in interaction with diet and photic condition. J. Lipid Research, 64: 100417.
Jurkat cell lines 	**Virology** **E. Avota** R. Schempp	Whole cell and oil droplet lipid profiling  NSM2: Neutral sphingomyolinase 2, SM: sphingomyelin, Cer: ceramide, DAG: diacylglycerol, PC: glycerophosphocholine	
Honey bee 	**Zoology II** **R. Scheiner** F. Schilcher	Triacylglycerol profiling; juvenile hormone 3 and sugar analysis in bee hemolymph 	Schilcher F., Hilsmann L., Ankenbrand M., Krischke M., Mueller M.J., Steffan-Dewenter I., Scheiner R. (2022) Honeybees are buffered against undernourishment during larval stages. Frontiers in Insect Science, 3:1146464. Schilcher, F., Hilsmann, L., Rauscher, L., Değirmenci, L., Krischke, M., Krischke, B., Ankenbrand, M., Rutschmann, B., Mueller, M. J., Steffan-Dewenter, I., and Scheiner, R. (2022) In Vitro Rearing Changes Social Task Performance and Physiology in Honeybees, Insects, 13:4.
Human T cells 	**Hygiene and Microbiology** **O. Kurzai** M. Batliner	Lipid profiling of farnesol-treated T cells 	
Lolium perenne 	**Zoology III** **J. Krauss** B. Fuchs V. Vikuk	Alkaloid analysis in endophyte-infected grass 	Vikuk V., Fuchs B., Krischke M., Mueller M.J., Rueb S, Krauss J. (2020) Alkaloid Concentrations of *Lolium perenne* Infected with *Epichloë festucae* var. lolii with Different Detection Methods - A Re-Evaluation of Intoxication Risk in Germany. J. Fungi, 6: E177. Krauss J., Vikuk V., Young C.A., Krischke M., Mueller M.J., Baerenfaller K. (2020) *Epichloë Endophyte* Infection rates and Alkaloid Content in Commercially Available Grass Seed Mixtures in Europe. Microorganism, 8: 498.
Trypanosoma 	**Zoology I** **M. Engstler** K. Bongers	Characterisation of the lipid composition of the outer membrane fraction 	
Neisseria gonorrhoeae 	**Microbiology** **D. Beier**	Quantification of amino acids in culture media 	Steiner T., Zachary M., Bauer S., Müller M.J., Krischke M., Radziej S., Klepsch M., Huettel B., Eisenreich W., Rudel T., Beier D. (2023) Central Role of Sibling Small RNAs NgncR_162 and NgncR_163 in Main Metabolic Pathways of *Neisseria gonorrhoeae*. mBio, 14: e0309322.