



VBCF PULSE



We offer new services!

Since the last VBCF Newsletter issued in August 2018, we have set up several new services - take advantage of it!

Opening of new electron microscope GLACIOS

The [Electron Microscopy Facility](#) celebrated the official opening of its new cryo-electron microscope with an open house on January 18th, 2019. After installation in the summer and a thorough trial phase the microscope has been brought to full operation.



Technical specifications:

- Thermo-Fisher Scientific GLACIOS
- 200 kV cryo transmission electron microscope
- Can load up to 12 samples
- Fully automated nitrogen refilling, aperture inserting & sample loading
- Equipped with Direct Electron Detector (Falcon3) and Volta phase plate

[Read more >>](#)



Malvern OMNISEC for thorough characterization of macromolecules/complexes

The [ProTech facility](#) introduces a new OmniSEC system which combines analytical size exclusion chromatography with right angle light scattering and measurement of refractive index, to accurately determine protein molecular weights and concentrations.

It can be used to analyze the oligomeric state of proteins and protein complexes and to quantify the different species present in a sample. Full UV-vis spectrum and intrinsic viscosity measurements enable the accurate determination of extinction coefficients and shape/size of protein samples.

Software to perform ProteoPlex analysis



The [ProTech facility](#) has recently acquired the software to perform ProteoPlex analysis with a license for all institutes on the campus, namely IMP, IMBA, GMI, MFPL and VBCF.

If you are interested in analyzing protein complex stability to screen for optimal buffer conditions this is the analysis tool you were waiting for.

[Read more >>](#)

(You need to login with your institute's account to get access)



New MiSeq Instrument in the Next Generation Sequencing facility

The [NGS facility](#) has acquired a second MiSeq instrument in collaboration with IMBA in order to provide even faster turn-around

times.

It provides access to focused applications such as targeted resequencing, metagenomics, small genome sequencing, targeted gene expression profiling, as well as our easiest and fastest way to test sequencing set ups. MiSeq reagents enable up to 15 Gb of output with 25 million sequencing reads and 2×300 bp read lengths.

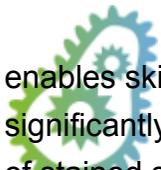
Upgrade for time-resolved fluorescence microscope!

The [Advanced Microscopy facility](#) has upgraded its time-resolved fluorescence microscope (FLIM) to allow for an order of magnitude faster fluorescence lifetime

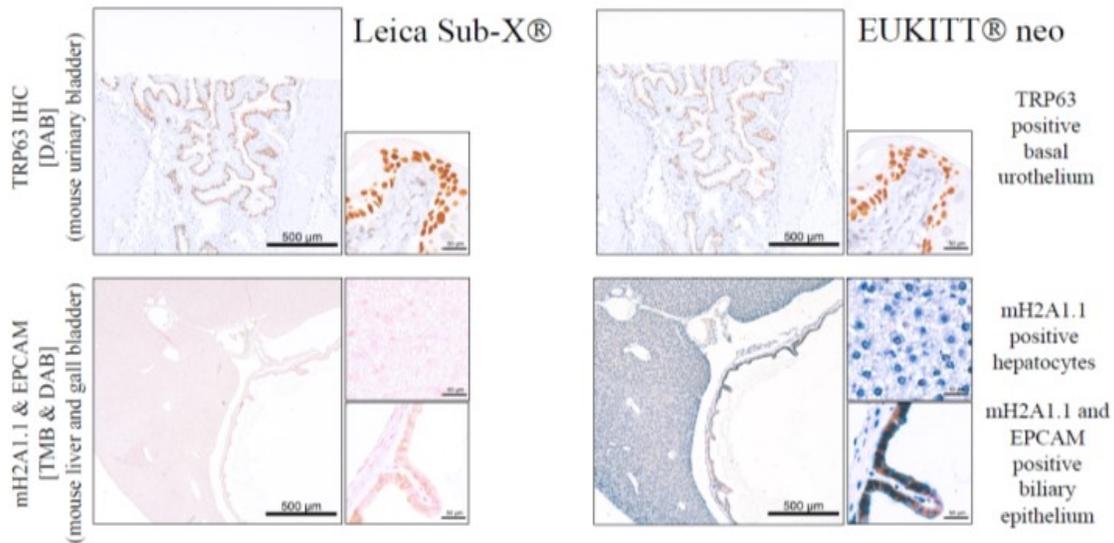
imaging, as well as full environmental control. This makes it more versatile for, among other things, dynamic live cell studies.



Eukitt neo mounting medium

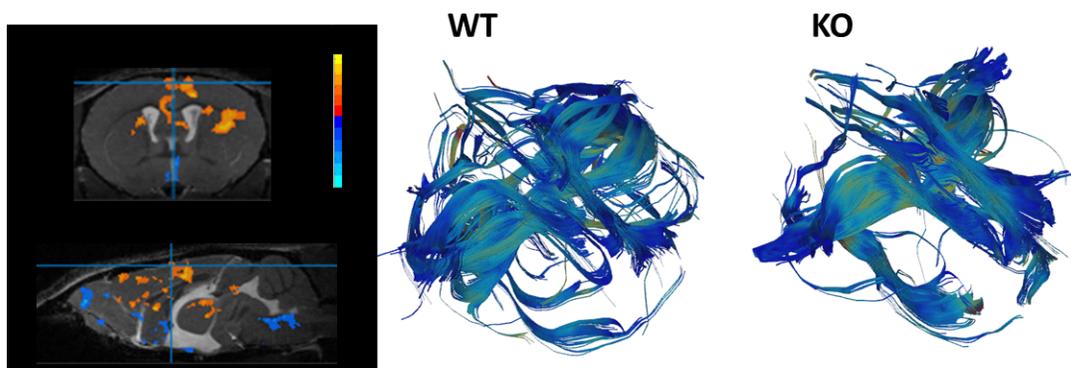


The new medium used by the Core Facility [HistoPathology](#) enables skipping of the Xylene step while mounting slides, resulting in a significantly safer mounting procedure without a decrease in quality or stability of stained slides.



[Preclinical imaging facility](#) offers combination of resting state functional MR imaging (fMRI) with diffusion tensor imaging to help researchers characterize KO mouse models

Resting state fMRI imaging can first be performed to help identify brain regions with significant differences in activation in KO mouse vs WT. If differences in activation are hypothesized to be due to anatomy, diffusion tensor imaging (DTI) can be used to examine axonal organization and tract tracing (tractography). In the featured example, functional differences were found in the cingulate region using resting state fMRI. When cingulate was used as a “seed”, the starting point for axonal tract tracing, additional differences were found in density and orientation of axonal tracts, suggesting structural differences together with functional differences in this KO mouse model.



Left: Resting state fMRI showing activation at rest in the cingulate cortex (blue cross bars). Right: Axonal tractography showing differences in axonal organization in WT and KO mouse (cingulate as a seed region).



UPCOMING EVENTS

Workshop on cognitive and behavioral screening of rodents and how to apply the 3Rs policy in this research

This workshop will discuss rodent husbandry and 3R policy issues, show the newest equipment and technologies for rodent phenotyping, discuss examples of neuroscientific and metabolic research projects on rodents and aims to better connect the Austrian-Czech rodent research community.

Co-organized by ICRC Brno and VBCF Vienna in frame of the project [RIAT-CZ](#).

When: March 7th - 8th, 2019

Where: International Clinical Research Center of St. Anne's University Hospital Brno, Pekarska 53, Brno, Czech Republic

Funded by: Interreg AT-CZ

[Read more >>](#)



Bioinformatics trainings

The BioComp facility offers a series of bioinformatics trainings on various topics which can make your research more effective and fashionable!

Lecturer: Dr Andras Aszodi.

As the trainings are very popular, don't miss your chance and register as soon as possible!

[Check out our trainings portfolio >>](#)



Viral tools to study functional connectivity of hypothalamic neurons

Date: March 19th, 2019

Organizer: VBCF ProTech facility

Speaker: Prof. Valery Grinevich

Institute: German Cancer Research Center, Heidelberg, Germany

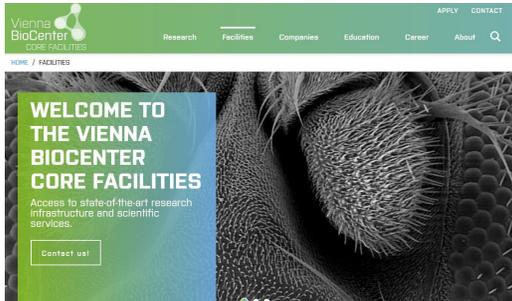
Host: Peggy Stolt-Bergner

Location: IMP 1.014

Broadcasted talk



FEATURED NEWS



We enable scientists to achieve their goals by providing access to cutting-edge research infrastructure in the field of biomedical research.

We keep our resources, technology, and expertise at the highest level in order to stay at the forefront of science. The Vienna BioCenter Core Facilities (VBCF) have been publicly funded by the Austrian Federal Ministry of Education, Science and Research, and the City of Vienna via Vienna Business Agency. Our shareholders are Vienna BioCenter, MFPL, IMBA, and BML.

New website for VBCF

Along with the new [Vienna BioCenter website](#), the [VBCF](#) has created a new corporate design in line with the whole VBC visual identity.

We have tried to structure our new website according to the needs and wishes of our users.

Therefore, we thank everybody who took his/her time to provide us with feedback on our old website and proposed better solutions to make the website more user-friendly and easy-to-use.

We have a new Managing Director

In January 2019, the new Managing Director of the [Vienna BioCenter Core Facilities GmbH](#), Daniele Soroldoni, started his work.

Daniele was formerly a Senior Scientist at EPFL in Lausanne (CH), where he established and coordinated a new, semiautomated zebrafish facility. Before that, he worked as a researcher at several European centers for research infrastructure such as the Max-Planck Institute in Dresden (DE), University College London (UK), and the Francis Crick Institute (UK).

His extensive experience in core facility establishment, management, and leadership qualified him as the VBCF's Managing Director.



Welcome!



Open access to selected VBCF services

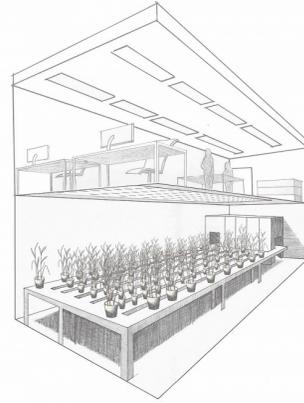
Take advantage of the possibility to get selected VBCF services for free!

The open access is supported by the project RIAT-CZ, programme INTERREG V-A AT-CZ.

[Read more >>](#)

Large infrastructure project PHENOPlant for phenotyping of crop plants approved

Congrats to the VBCF [Plant Sciences Facility!](#)
Their [FFG FuE Infrastrukturförderung](#) application
for a multi-sensor and multi-approach high-
throughput (HT) plant phenotyping platform
(PHENOPlant) has been granted!



This infrastructure will significantly contribute to the state-of-the art status of the [VBCF](#), as it will become the only multi-sensor high-throughput infrastructure for phenotyping of Arabidopsis and mid-size crop plants in Austria.

[Read more >>](#)



Core facility Bioinformatics runs in limited operation

The head of the core facility Bioinformatics, Attila Gyenesei, has left along with the bioinformaticians Sini Juntilla and Bence Galik. The software engineers Pedro Serrano and Manuel Pasiëka are currently on educational leave, therefore, the core facility is running in a limited mode of operation.

Currently, the facility offers further bioinformatics courses which will be running till September 2019.



ANNOUNCEMENTS

WE'RE HIRING



The [Next Generation Sequencing Facility](#) looks for two motivated candidates for the following positions:

- **Bioinformatician** (30-38h/week)
- **Sequencing Specialist** (30-38h/week)

Interested? [Read more >>](#)



The [PlantS facility](#) looks for a **Bioinformatician/Data Analyst** for **High-throughput Plant Phenotyping** to join our team and help us build our data analysis pipelines. (38 h/week).

[Read more >>](#)

WE HAVE NEW COLLEAGUES! AND WE SAY GOODBYE TO SOME OTHERS



Edmundo Sanchez Guajardo, R&D Scientist at Advanced Microscopy, is on educational leave.

Martina Hödl-Baumgartner has been appointed as Advanced Microscopy Applications Specialist since January 2019.

Clara Billroth was accepted as a PhD student with the PhD thesis topic "Advanced phase microscopy for protein detection".

Welcome!



Barbara Ullmann-Wohlmuth, Software Engineer at Strategic Information Management (SIM), has left for maternity leave.

The latest reinforcement of the service unit are our new Software Engineers **Selina Brinnich** and **Simon Strobl**.

Welcome!



Attila Gyenesei (head of the core facility Bioinformatics), **Sini Juntilla** (Bioinformatician) and **Bence Galik** (Bioinformatician) have left.

Pedro Serrano and **Manuel Pasioka** (both Software Engineers) left for educational leave.



- **Ivana Bilusic-Vilagos** (Laboratory Scientist at ProTech) has returned after her maternity leave.
- **Eva Roesmann** joined as a Master's student.
- **Martin Puchinger** joined as a scientist.
- **Ivan Hang** has left.



Renate Ladwehr, Sequencing Specialist at the core facility NGS, has left.



RECENT PUBLICATIONS



Cdk6 coordinates *Jak2*^{V617F} mutant MPN via NFκB and apoptotic networks. Uras IZ, Maurer B, Nivarthi H, Jodl P, Kollmann K, Prchal-Murphy M, Milosevic Feenstra JD, Zojer

M, Lagger S, Grausenburger R, Grabner B, Holly R, **Kavirayani A**, Bock C, Gisslinger H, Valent P, Kralovics R, Sexl V.

Blood. 2019, doi: 10.1182/blood-2018-08-872648.

[Full article >>](#)

Precocious expression of Blimp1 in B cells causes autoimmune disease with increased self-reactive plasma cells. Bönelt P, Wöhner M, Minnich M, Tagoh H, Fischer M, Jaritz M, **Kavirayani A**, Garimella M, Karlsson MC, Busslinger M.

EMBO J. 2018 Nov 29, pii: e100010.

[Full article >>](#)

SELECTED ACKNOWLEDGEMENTS

VBCF is a company providing scientific service. Therefore, acknowledgements of our services in scientific publications are the basic tool for measuring our performance.



Single-cell analysis uncovers convergence of cell identities during axolotl limb regeneration. Gerber T, Murawala P, Knapp D, Masselink W, Schuez M, Hermann S, Gac-Santel M, Nowoshilow S, Kageyama J, Khattak S, Currie JD, Camp JG,

Tanaka EM, Treutlein B.

Science, 2018 Oct; 362 (6413): eaaq0681

[Full article >>](#)



Structural basis for acceptor RNA substrate selectivity of the 3' terminal uridylyl transferase Tailor. Kroupova A,

Ivascu A, Reimão-Pinto MM, Ameres SL, Jinek M.

Nucleic Acids Res. 2019 Jan 25;47(2):1030-1042

[Abstract >>](#)

Draft Genome Resource for the Potato Powdery Scab Pathogen *Spongospora subterranea*. Ciaghi S, Neuhauser S, Schwelm A.

Mol Plant Microbe Interact. 2018 Dec;31(12):1227-1229.

[Abstract >>](#)

NanoPARE: parallel analysis of RNA 5' ends from low-input RNA.

Schon MA, Kellner MJ, Plotnikova A, Hofmann F, Nodine MD.

Genome Res. 2018 Dec;28(12):1931-1942.

[Abstract >>](#)



Molecular to organismal chirality is induced by the

conserved myosin 1D. Lebreton G, Géminard C, Lapraz F,

Pyrpassopoulos S, Cerezo D, Spéder P, Ostap EM, Noselli S.

Science. 2018 Nov 23;362(6417):949-952.

[Abstract >>](#)

Epithelial cells release adenosine to promote local TNF production in response to polarity disruption. Poernbacher I, Vincent JP.

Nat Commun. 2018 Nov 7;9(1):4675.

[Abstract >>](#)

Stromalin Constrains Memory Acquisition by Developmentally Limiting Synaptic Vesicle Pool Size. Phan A, Thomas CI, Chakraborty M, Berry JA,

Kamasawa N, Davis RL.

Neuron. 2018 Nov 26.

[Abstract >>](#)



VBCF LIFE



VBCF runs!

VBCF always supports healthy living of its employees. The last sport events where we participated are following runs:

- [Vienna Business Run](#) 06.09.2018 - 9 participants

- [Muddy Angel Run](#) 08.09.2018 – 11 participants
- [Vienna Night Run](#) 25.09.2018 – 13 participants
- [Cancer research run](#) 06.10.2018 – 7 participants
- [Mödlinger Adventlauf](#) 02.12.2018 – 7 participants
- [Silvesterlauf](#) 31.12.2018 – 7 participants

New babies at VBCF

The VBCF is happy to announce that two baby boys were born during the past few months:



Fynn, son of the Head of Correlated Multimodal Imaging Node Austria, Andreas Walter, born on September 28th, 2018.

Marvin, son of the Software Engineer Barbara Ullmann-Wohlmuth, born on December 18th, 2018.

Welcome to the world!



PAST EVENTS



Events organized within the project [RIAT-CZ](#)

- Plant Phenotyping Forum: The role of Austria and Eastern Europe in agricultural production
- Single Cell seq Usermeeting
- Science in your lab “Time-resolved Fluorescence Workshop”
- Lattice light sheet microscopy – innovations, applications and future directions.
- Advanced plotting with ggplot in R



Events organized within the project [CAPSID](#)

Joint Czechoslovak Virology Conference and 1st SK-AT Structural Virology Meeting

The Biomedical Center of the Slovak Academy of Sciences and VBCF co-organized on February 13th and 15th, 2019 a conference focused on the recent advancements of virology and structural virology in the area of Austria and Eastern Europe. The goal was to bring together scientists working on all fields of virology research from basic to applied and clinical science.

Kick-Off Meeting

On July 17th, 2018, the project partners VBCF and BMC met in Vienna to kick-off the Interreg project CAPSID. The project is dedicated to increasing the international visibility of the biomedical research landscape in the Slovak-Austrian border region. With a total of 11 project partners, Vienna Biocenter Core Facilities (VBCF) in Vienna and the Biomedical Research Center of the Slovak Academy of Sciences in Bratislava have joined forces to improve the scientific communication in the region and the international visibility of the cross-border virological and biomedical research community.

CAPSID Seminar Series

In the framework of Interreg project CAPSID, the seminar series on virology in the cross-border region has started. On 11th and 12th Dec 2018, Prof. Ettrich from Larking University Miami (US), gave two exciting talks about modelling and simulating cation translocation in human ORAI channels. Stay tuned for more talks on cutting edge virological and biomedical research!



6th Next Generation Sequencing Vienna Symposium & Workshop

November 15th, 2018, co-organized with CeMM.

For the sixth time, Vienna NGS Symposium brought together a diverse group of researchers who develop and apply advanced sequencing technology. Six scientific talks were contributed by scientists from Vienna who use NGS in exciting new ways: Elly Tanaka (IMP), Simon Hippenmeyer (IST Austria), Stefan Ameres (IMBA), Florian Grebien (Vetmeduni Vienna), Eleni Tomazou (St. Anna CCRI), Ron Pinhasi (Uni Vienna). The topics ranged from axolotl, mouse, and fly to childhood cancers and ancient DNA in archeology, demonstrating how NGS technology transforms many fields. A further highlight of the symposium was the keynote lecture by Robert P. Zinzen (MDC Berlin) about reconstructing the development of the fruit fly from single-cell RNA sequencing data.



VBCF Flash News is a newsletter that informs you about the latest happenings at the VBCF. Do you have any news, comments or ideas? [Get in touch with us!](#)