



## UPCOMING EVENTS

### Bringing *Life* into an old technique

The 1<sup>st</sup> BioBrillouin Meeting will be held in Vienna September 13th - 15th. It is a conference dedicated to the advances in the field of Brillouin Light Scattering



Conference on Brillouin Light Scattering Microspectroscopy for Biological and Biomedical Research and Applications

Mircospectroscopy for Biological and Biomedical Research and Applications.

Registration is open [HERE](#).

### APPN Workshop: Multispectral 3D Plant Imaging

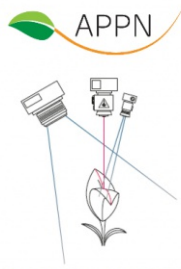
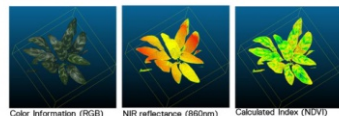
#### PHENOSPEX F500 IN ACTION WITH YOUR PLANTS

We will cultivate and scan YOUR plants – with hands-on data analysis to be performed during the workshop – including follow-up discussion of results in individual meetings.

October 12<sup>th</sup> & 13<sup>th</sup> 2017

GMI Orange Seminar Room  
Dr. Bohr-Gasse 3  
1030 Vienna

Free registration:  
[www.appn.at/registration/](http://www.appn.at/registration/)



#### Program

##### Thursday, 12<sup>th</sup> of October

- 09:00-10:00 Presentation PlantEye F500
- 10:00-10:30 Discussion
- 10:30-11:00 Coffee break
- 11:00-12:00 F500 demo scan
- 12:00-13:00 Lunch
- 13:00-13:30 Intro to data analysis
- 13:30-14:30 Hands-on data analysis
- 14:30-15:00 Coffee break
- 15:00-16:00 Hands-on data analysis
- 16:00-17:00 Final discussion

##### Friday, 13<sup>th</sup> of October

The Phenospex team will be available on Friday for individual meetings to discuss results.

#### Contact

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## APPN Workshop on Multispectral 3D Plant Imaging

[PHENOSPEX](#) will visit the VBC with their new PlantEye F500 device and perform multispectral 3D scans of your samples.

Registration is open for a limited number of participants, so be fast (first come, first served)!

No registration fees.

**Dates:** October 12th - 13th 2017

**Venue:** Vienna Biocenter, GMI Orange Seminar Room, Dr. Bohr Gasse 3, 1030 Vienna

[Read more >>](#)



## New BioCOMP training: Introduction to Galaxy

The next training series of the CF Bioinformatics & Scientific Computing focused on [Introduction to Galaxy](#) will be held in October 2017. The course will be announced soon.



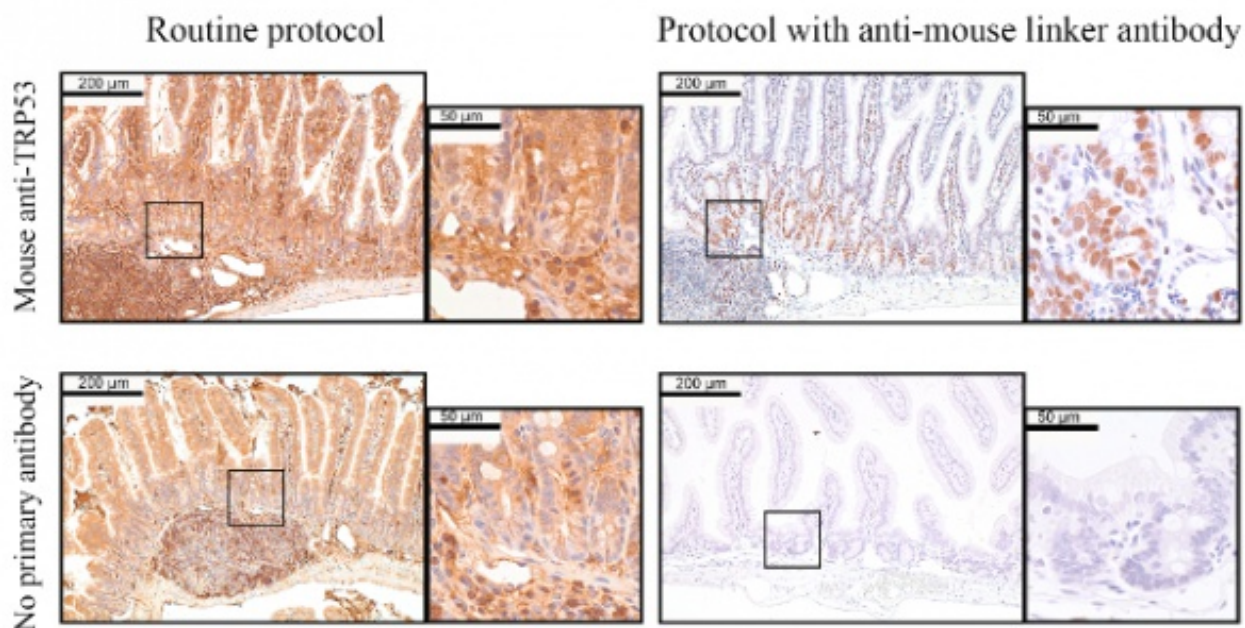
## VBCF PULSE

### NEW SERVICES AND INSTRUMENTATION AVAILABLE!



## Advanced Microscopy

**La Vision Ultramicroscope II** (light sheet microscope for large cleared samples) has been acquired in collaboration with Keays Lab. The device is now available for all users.



## HistoPathology

The HistoPathology facility successfully adapted a protocol shared by Roche

Diagnostics (Meylan) during a collaborative training visit and **optimized the usage of a rabbit anti-mouse linker antibody to mitigate background staining and enhance the detection of the marker of interest**. The problem of high levels of undesirable background staining is frequently observed when the primary antibody and test tissue are from the same species (mouse).

The **figure** shows Automated protocol for immunohistochemical detection of TRP53 (p53).

Reference: Xia X et al. Pathology 2016. 48(S1): S161



## Preclinical Phenotyping

- Protocol for inhibitory avoidance (learning) test has been established on wild type mice.



## Bioinformatics & Scientific Computing

**Training news:** Those of you who have participated in our trainings in the past may still remember the spaghetti of Ethernet cables laid out on the table in the VBCF Seminar Room. You were required to plug one of those cables in your notebooks in order to access the training data on the teacher's computer. Thanks to a collaboration between BioComp and the GMI HPC team the Ethernet cables have finally disappeared. We now use a virtual machine (VM) running on the GMI's OpenStack private cloud platform. Training participants simply log into this VM using one of the wireless access points available at the VBCF. Configuration and maintenance of the VM became much easier, too.

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## WHAT HAPPENED - brief info on past events





## Events organized within the project RIAT-CZ

Within the project RIAT-CZ we have organized several workshops focused on mutual knowledge exchange among experts in the AT - CZ cross-border region in respective fields of expertise. The events were supported by the programme Interreg AT-CZ V-A, project RIAT-CZ, No. ATCZ40.



### **RNA Seq Workshop**

- Hands-on workshop focused on Sample quality control, mRNA Library Preparation and quality control, and Sequencing data quality control was organized on the 10th - 11th May 2017 in Brno
- Organizer: CF Next Generation Sequencing

### **Best Practices for Behavioural Screening and Metabolic Measurements on Rodents**

- Held on the 23rd May in Brno, Czech Republic
- Speakers from 4 Institutes (FNUSA-ICRC in Brno; VBCF, IMP, and IMBA) and 1 company ( TSE-Systems, Germany) provided insights into experimental design, data reproducibility, technologies available for behavioural experiments and case studies on Parkinson and pathological impulsivity models.



### **Modern Techniques in Molecular Biology and Genome Engineering**

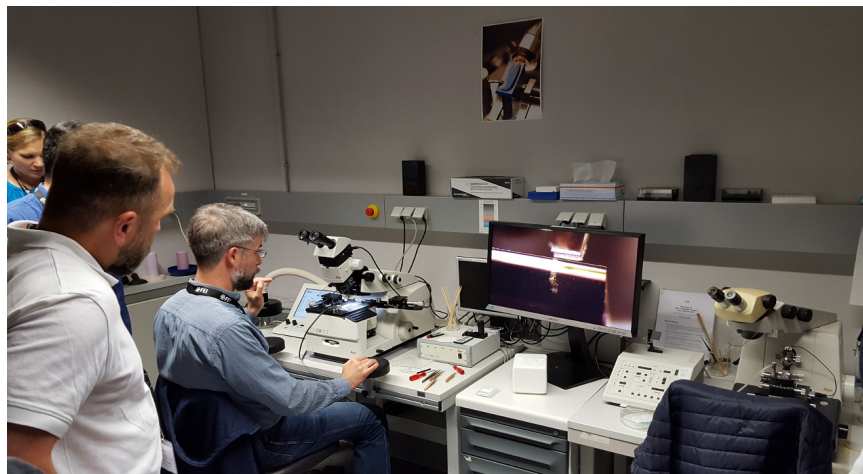
- Hands-on workshop focused on SLIC, Gibson, and Golden Gate cloning, Multi-gene cloning and applications, CRISPR/Cas9 genome engineering in mammals and plants, and gRNA design and the use of RNPs was organized on the



18th - 20th July in Vienna

• Organizer: CF Protein Technologies

The EM facility together with [Nexperion](#) hosted [International Advanced Workshop on Cryo-electron Tomography](#) from May 6th - 12th. The workshop was fully booked, which documents the growing importance of cryo-electron microscopy in research.



## FEATURED NEWS



## Vienna Drosophila Resource Center has celebrated its 10th anniversary

**Vienna Drosophila Resource Center (VDRC)** is one of the world's most renowned centers providing stocks of transgenic fruit flies (*Drosophila melanogaster*), located at Vienna Biocenter.

The VDRC became part of VBCF in 2011 but was initiated by Barry Dickson and Krystyna Keleman at IMP/IMBA in 2007 when the first fly stock was distributed. Since then, we have built up a collection of over 38.000 transgenic



fly lines, shipped more than 1.3 million stocks to over 2.000 scientists worldwide and over 2.500 publications have acknowledged use of VDRC resources – a significant achievement!

We celebrated this 10 year milestone with plenty of champagne and beer and a friendly mini-golf competition in the Prater.

## Summer stipends for youth

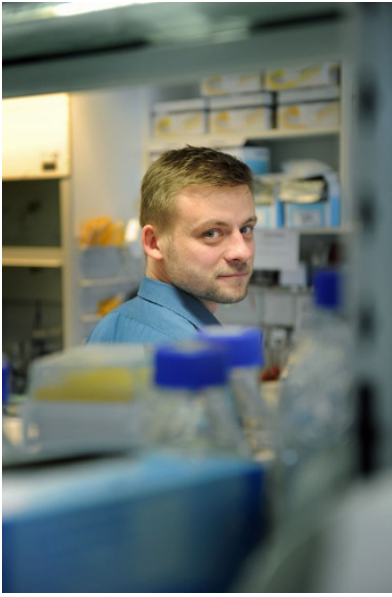
VBCF is open to share its expertise with young talented students. Altogether 8 female university students supported by the FFG programme [FemTECH Praktika](#), 4 high-school students supported by the FFG programme [Talente entdecken](#) and 2 summer students supported by VBCF were accepted for their up to 6-months fellowships at VBCF where they actively take part in the operation of the core facilities or in development of innovative services.

**Welcome!**

Project title	Programme	Student	Core facility	Supervisor	Duration
Plant Phenotyping	FemTECH praktika	Klara Antonia Wuketich	PlantS	Jakub Jez	5 months
MicEC	FemTECH praktika	Paula Hyks	AdvMicro	Edmundo Sánchez Guajardo	6 months
T cells and cancer	FemTECH praktika	Dina Schuster	Metabolomics	Thomas Koecher	4 months
NGS Internship	FemTECH praktika	Ariane Mandlbauer	NGS	Andreas Sommer	2 months
TardiUltraStruct	FemTECH praktika	Katharina Keuenhof	EM	Thomas Heuser	6 months
RNAi line genotyping	FemTECH praktika	Sabine Weissmayer	VDRC	Lisa Meadows	6 months
BigDataAnalysis	FemTECH praktika	Judit Szaffenauer	BioComp	Attila Gyenesei	6 months
Correlative Imaging	FemTECH praktika	Tamina Laimer	CMI	Andreas Walter	6 months
Correlative Imaging	FemTECH praktika	Alina Psenicny	AdvMicro	Kareem Elsayad	6 months
EMprep	Talente entdecken	Jesica Hare	EM	Thomas Heuser	1 month
EMprep	Talente entdecken	Alessandro Wagner	EM	Thomas Heuser	1 month
Creation and maintenance of transgenic Drosophila RNAi lines	Talente entdecken	Thomas Groiss	VDRC	Lisa Meadows	1 month
	Talente entdecken	Michelle Mayer	VDRC	Lisa Meadows	1 month
	Summer fellowship	Laura Helberger	VDRC	Lisa Meadows	1 month
	Summer fellowship	Nina Zehetner	VDRC	Lisa Meadows	1 month
Fly food optimization	Summer fellowship	Michael Stach	VDRC	Lisa Meadows	1 month

## VBCF in the press

**CRISPR Discoverer Remains Remote from the Spotlight**



An interview with the VBCF scientist **Krzysztof Chylinski** was published in **Der Standard** about his continuing work on the CRISPR/Cas9-system - a tool used world-wide for gene engineering that was co-developed by Krzysztof. He has brought the technology to the CF Protein Technologies, which provides it to a broad range of customers, enabling the whole Campus to benefit from his unique expertise. The interview has triggered an interesting discussion among the readers on e.g. patent acquisition, ethics of research, publishing

research papers etc.

You can the whole interview [HERE](#).

## The Simulation of Natural Light

The growth chambers provided by the CF Plant Sciences are able to simulate various environmental conditions, including the extreme ones (e.g. frost, drought, high temperatures, CO<sub>2</sub>).

Simulation of these conditions is one of the most used tools for development of plants adapted to the changing climate.

However, the data collected in the chambers have so far been influenced by the use of inhomogeneous artificial light provided by fluorescent tubes.

Therefore, **two growth chambers have been equipped with high-tech LED-light provided by the company Rhenac GreenTec**. The new light source will enable the simulation of various light conditions, including natural light, and improve the variability and reproducibility of the collected phenotypic data and boost the *Marchantia* research at the Campus.

The whole article was published in [GIT Labor-Fachzeitschrift 7/2017](#).





# ANNOUNCEMENTS

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



As of January 2018, **Juraj Gregan** will strengthen the CF Advanced Microscopy as Staff Scientist.

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FH Wiener Neustadt student **Lisa Wozelka** finished her bachelor Thesis in the CF Electron Microscopy and successfully defended. **Congratulations!**

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**Christian Aigner** is now working full-time at ProTech as a Laboratory Assistant.

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VDRG technicians Eva Mairhofer, Yulia Barinova, and Randy Egleston left, **Barbara Ruplitsch**, **Tamara Burger** and **Kristina Belogradova** returned (technicians).

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## RECENT PUBLICATIONS



**A novel non-canonical PIP-box mediates PARG interaction with PCNA.** Tanja Kaufmann, Irina Grishkovskaya, Anton A. Polyansky, Sebastian Kostrhon, Eva Kukolj, Karin M. Olek, Sebastien Herbert, Etienne Beltzung, Karl Mechtler, Thomas Peterbauer, Josef Gotzmann, **Lijuan Zhang**, Markus Hartl, Bojan Zagrovic, **Kareem Elsayad**,



[Abstract & full text >>](#)

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**Protection of Arabidopsis blunt-ended telomeres is mediated by a physical association with the Ku heterodimer.** Valuchova S, Fulnecek J, Prokop Z, **Stolt-Bergner P**, Janouskova E, Hofr C,

Riha K

*Plant Cell* epub 5 June 2017

[Abstract >>](#)

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## ACKNOWLEDGEMENTS



**Cohesin is positioned in mammalian genomes by transcription, CTCF and Wapl.** Busslinger GA, Stocsits RR, van der Lelij P, Axelsson E, Tedeschi A, Galjart N, Peters JM

*Nature* 2017 Apr 19

[Abstract >>](#)

**Adaptive sequence evolution is driven by biotic stress in a pair of orchid species (Dactylorhiza) with distinct ecological optima.** Balao F, Trucchi E, Wolfe T, Hao BH, Lorenzo MT, Baar J, Sedman L, Kosiol C, Amman F, Chase MW, Hedrén M, Paun O

*Mol. Ecol.* 2017 Mar 30

[Abstract >>](#)

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**High throughput inclusion body sizing: Nano particle tracking analysis.** Reichelt W.N., Kaineder A., Brillmann M., Neutsch L., Taschauer A., Lohninger H., Herwig C. (2017)

[Abstract >>](#)

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**Brain-specific knockin of the pathogenic Tubb5 E401K allele causes defects in motor coordination and prepulse inhibition.**

Breuss MW, Hansen AH, Landler L, Keays DA.

*Behav Brain Res.* 2017 Apr 14;323:47-55. doi: 10.1016/j.bbr.2017.01.02

[Abstract >>](#)

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Use of VDRC resources has been acknowledged in over 200 publications so far in 2017, including the following:

**EGFR/ARF6 regulation of Hh signalling stimulates oncogenic Ras tumour overgrowth.** Chabu C, Li DM, Xu T.

*Nat Commun.* 2017 Mar 10;8:14688. doi: 10.1038/ncomms14688.

PMID:28281543

[Abstract >>](#)

**Valosin-containing protein (VCP/p97) inhibitors relieve Mitofusin-dependent mitochondrial defects due to VCP disease mutants.** Zhang T, Mishra P, Hay BA, Chan D, Guo M.

*Elife.* 2017 Mar 21;6. pii: e17834. doi: 10.7554/eLife.17834. PMID:28322724

[Abstract >>](#)

**Upregulated energy metabolism in the Drosophila mushroom body is the trigger for long-term memory.** Plaçais PY, de Tredern É, Scheunemann L, Trannoy S, Goguel V, Han KA, Isabel G, Preat T.

*Nat Commun.* 2017 Jun 5;8:15510. doi:10.1038/ncomms15510.

PMID:28580949

[Abstract >>](#)



**Neural circuits for long-term water-reward memory processing in thirsty *Drosophila*.** Shyu WH, Chiu TH, Chiang MH, Cheng YC, Tsai YL, Fu TF, Wu T, Wu CL.

*Nat Commun.* 2017 May 15;8:15230. doi:10.1038/ncomms15230.  
PMID:28504254

[Abstract >>](#)



## VBCF LIFE



### New VBCF baby

We are happy to announce that on the 21st May 2017, **Anton Manin** was born, the new baby of our colleague Anastasia Manina (VBCF's controller). **Welcome to the world!**

### VBCF runs!

The **Team VBCF** managed to beat the [X-cross run](#) in Vienna Prater and achieved the excellent 5th place among 91 teams!!!

It was a perfect day with lots of fun and a great party afterwards!



## VIENNA BIOCENTER CORE FACILITIES

(Peggy STOLT-BERGNER, Anoop KAVIRAYANI, Vera SCHOFT, Lisa MEADOWS)

hat bei  
**Business-2-Row 2017**

im Finale



E  
den  
**2. Platz**  
erreicht



a great time!

# Business-to-Row competition

VBCF took part in the [Business-to-Row competition](#) at the Wiener Ruderverein on June 10th. The team finished second in the E final and had

