This year the workshop “Cell Biology of Viral Infections” celebrated its 15th anniversary with the theme “Revolutionizing cell biology tools for virology”. 43 people attended the workshop, which included 25 students and 5 post-docs. The workshop has continued its tradition as an open and friendly environment for students to have fruitful discussion and get feedback and new insights into their work. Throughout the years, we noticed that students are more and more participative and are not afraid of asking questions to each other and to the keynote speakers. We are very proud that the workshop is successfully reaching its objectives in making students more confident and opened minded on various fields of research.

The workshop was kicked off by the keynote lecture from Prof. Jochen Guck of the Technical University of Dresden. Prof. Guck discussed his labs focus on understanding how mechanical functions can be related to cellular changes. His lab has developed cutting edge methods including microfluidic optical stretchers and real-time deformability cytometry which allows for high throughput measures of mechanical changes in cells. These techniques are currently being used to analyze blood samples to better predict infections, cancers, and abnormalities.

The second keynote lecture was given by Prof. Khalid Salaita from Emory University in Atlanta, GA, USA. Dr. Salaita’s work focuses on understanding how mechanical forces influence biological processes. As cellular forces can be so small, his lab has developed key technologies to be able to measure forces at the pN level. A key point for the students was the evolution of these methods, as he showed three different generations of force sensors and how his lab is constantly adapting and improving its technologies. Prof. Salaita’s lab is now using these force sensors to ask questions about “mechano-pharmacology” where they are able to understand how lung cells response to asthma medications. They hope to apply these sensors to many other medical fields and science disciplines in the near future.

Prof. Matthias Gunzer from the University of Essen delivered the third keynote address. His lab has pioneered imaging methods to enable the visualization of whole tissues from animals. They are inspired by the idea of “can you count this”. This has pushed the Gunzer lab to develop computation methods to be able to quantify important features in a tissue. Using this technology, they can understand how the brain changes after a stroke and which cell populations are most affected. This understanding has then helped them evaluate medications that if given soon enough after onset, can decrease the harmful effects of the stroke. In addition, the Gunzer lab is developing methods to track cell migration of neutrophils. These efforts have allowed them to detect onset of disease prior to onset of symptoms. Additionally, these methods have allowed them to evaluate patients with neutrophil disorders and they are now able to determine which therapies will restore the neutrophil populations to normal levels and behaviors.

The final keynote lecture was given by Dr. Kem Sochaki. Dr. Sochaki is a staff scientist at the National Institute of Health in Bethesda, USA. As her training was in microscopy methods, she related to the students how important it is to look at an image with an open mind. She showed the audience how focusing on obvious features can cause you to miss small but important findings. Dr. Sochaki’s favorite images are those of clathrin coated structures forming on the

plasma membrane. She has adapted old electron microscopy methods and combined them with fluorescence to be able to correlate the ultrastructure with the location of a protein of interest. Her work has focused on visualizing the numerous adaptors that are required to create the fully formed clathrin pit. This work was of great interest to many virologists as viruses often hijack the clathrin pathway to invade cells.

In additional to the exciting keynote lecturers, 26 participants presented the current status of their virus research. Last year's student speaker award winners returned and delighted the audience with the progress that they have made over the past year. This year the student speaker prize was given to Marta Fratini from the lab of Dr. Steeve Boulant. Marta is a very enthusiastic speaker and was able to engage the audience as she described her work on understanding the very early steps in the clathrin dependent uptake of virus particles. She was able to convince the audience that size does matter and the cargo size can influence the formation of a clathrin coated pit.

The organizers would like to extend their deepest thanks to the supporters of this workshop. The CHS foundation has been a generous contributor that has allowed us to bring in top notch international speakers and to provide travel support for student award winners. The workshop would also not be possible without the financial support of Reblikon, the German society for Cell Biology (DGZ) and the German Society for Virology (GfV).

This was the third and final year for Dr. Steeve Boulant and Dr. Claudia Claus to host the workshop. The co-coordinator positions have been passed, upon voting, to Dr. Pierre-Yves Lozach from Heidelberg University and Dr. Gisa Gerold from Twincore, Hannover. They will continue the tradition of a lively and student friendly meeting at the Kloster Schoental and they have already reserved the dates for next year: November 8-10, 2017.