Junge GfV

NEWSLETTER

Issue 1/21

Highlights

Upcoming events

February 2022
5th GfV SARS-CoV2 workshop

29.3.-30.3.2022
ACHIEVE Academy, Munich

30.3.-2.4.2022
Annual Meeting of the Society of Virology, Munich

8.5.-11.5.2022
Annual European Congress of Virology, Gdansk (Poland)

News

Dear fellows,

This newsletter should provide you with information about the junge GfV (young Society for Virology). It will be published every second month with important information about science and career planning. If you want to receive it further, please sign in via the homepage: https://g-f-v.org/jungegfv/

We further want to thank all the contributors to our first newsletter! Special kudos go to Ramya Nair, a PhD student at the LMU Munich, who designed our junge GfV logo and the newsletter.

Your newsletter team

Preface

Based on the initiative of the president of the Society for Virology (GfV) in May 2021, we want to build and offer a network for researchers across different career stages, from bachelors to doctoral students up to senior scientists (PostDocs/staff scientists/junior group leaders) and physicians in training, that gives support in science and career planning. We first carried out a survey among you and almost 300 of you responded to it, which is amazing ☺. We are now updating the homepage, implementing the newsletter and SLACK, we are already represented on the board of the GfV and will also be visible at the next annual meeting of the Society for Virology – don‘t miss it. Many more things will come….But who are we?

Hanna-Mari Baldauf
(spokesperson), LMU Munich
- *Innate immunity*
- *Retroviruses*
- *Acute myeloid Leukemia*

Yvonne Börgeling
University Hospital Muenster
- *Virus-host interactions*
- *Signal transduction*
- *Influenza A virus*

Annemarie Berger
University Hospital Frankfurt
- *Clinical virology*
- *Molecular diagnostics*
- *Viral hepatitis*
- *Respiratory infections*

Anja Erhardt
University Witten/Herdecke
- *Viral Vectors*
- *Adenoviruses*
- *Gene therapy*

Tina Ganzenmüller
University Hospital Tuebingen
- *Clinical virology*
- *Infections in the transplant setting*
- *High-throughput sequencing of viral genomes from clinical specimens*

Gisa Gerold
University of Veterinary Medicine Hanover
- *Virus-Host interactions*
- *Proteomics*
- *HCV, Arenaviruses, Bunyaviruses*

Eva Herker
Philipps University Marburg
- *Virus-host interactions*
- *Flaviviruses, HCV*
- *Lipid droplets; lipid metabolic pathway*

Thomas Hoenen
Friedrich-Loeffler-Institut
- *Virus-host interactions*
- *Filoviruses, Arenaviruses, Bunyaviruses*
- *Inclusion bodies*

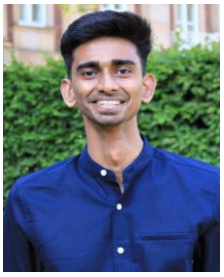
Florian Kreppel
University Witten/Herdecke
- *Onkolysis*
- *Virotherapy*
- *Gene therapy*

Stephanie Pfänder
Ruhr-University Bochum
- *Coronaviruses*
- *Virus Host Interactions*
- *Immune Control*

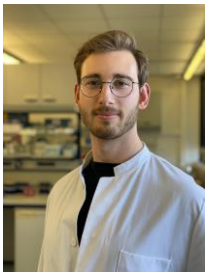
Corinna Pietsch
University Hospital Leipzig
- *Clinical virology*
- *Emerging and zoonotic viruses*
- *Evolution of human pathogenic viruses*
- *Virus-host interactions; Viral immunity*

Asisa Volz
University of Veterinary Medicine Hanover
- *Vector-vaccine development*
- *Zoonotic and emerging virus infections*
- *Poxviral innate and adaptive immunity*

Our provisional members



Sriram Kumar
University Hospital Muenster
- *Influenza-A viruses*
- *SARS-CoV2*



Philipp Osterman
Heinrich Heine University Duesseldorf
- *HIV-1 RNA processing and antisense-mediated inhibition*
- *SARS-CoV-2 structural proteins and antiviral immunity*

Reports

In this section, we will summarize any jGfV-related workshops / conferences. If you have attended one and would like to write a report about it or have further suggestions, please email to jGfV@G-f-V.org.

20th Workshop "Immunobiology of viral infections"

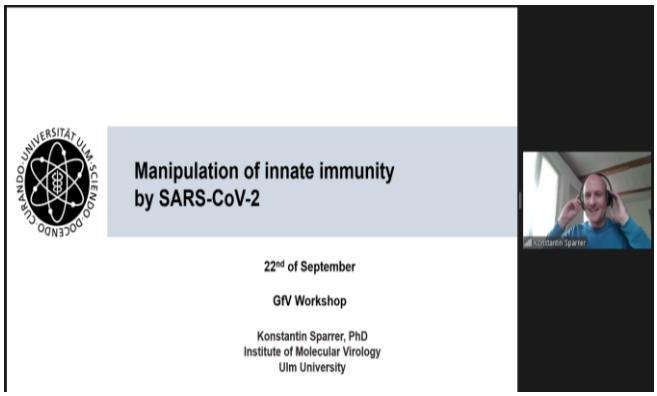
Sabrina Clever, University of Veterinary Medicine Hanover

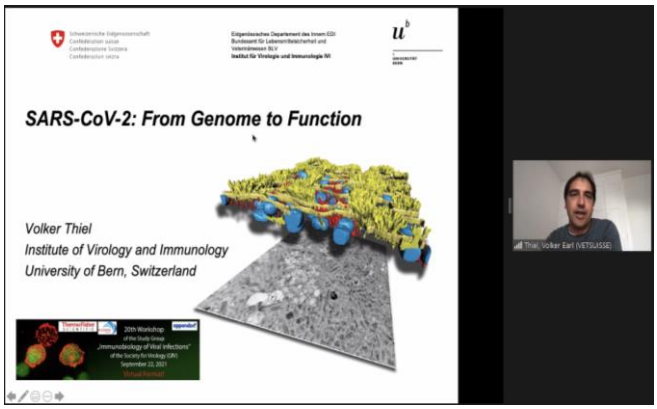
Due to the current situation, the 20th workshop of the study group "Immunobiology of Viral Infections" of the Society for Virology (GfV) still had to take place in a virtual format on September 22nd 2021.
Scientifically well introduced by interesting keynotes on COVID-19 research, the workshop was kicked-off by Prof. Dr. Volker Thiel (University of Bern, Institute for Virology and Immunology, Switzerland) talking about SARS-CoV-2 reverse genetics, innate immune evasion and coronavirus replication. Dr. Konstantin Sparrer (University Hospital Ulm, Molecular Virology, Germany) further explained the manipulation of the innate immune system by SARS-CoV-2 and Dr. Vincent Munster (National Institute of Allergy and Infectious Diseases, Virus Ecology Section, USA) completed this topic with a presentation on rapid preclinical medical countermeasure development against COVID-19. An additional aspect was introduced by Drs. Mayur Bakshi and Stephen A. Rackstraw (ThermoFisher Scientific) talking about new ways in flow cytometry.

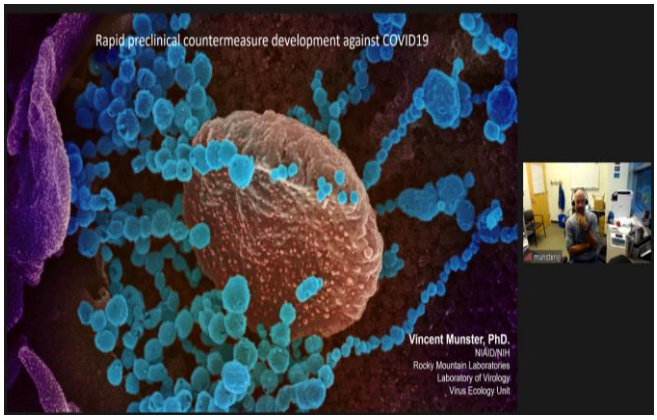
Since the major goal of this workshop is to establish a platform for scientific exchange among young and experienced scientists working on immunobiology of viral infections, the scientific program was completed by scientific presentations on three different topics (I: Innate Immunity to Viral Infections, II: Adaptive Immunity to Viral Infections, III: Beyond Classical Pathways). The "Elevator Pitch" section was introduced for the first time as a new format. The best presentation in each category was elected and received a free membership for the GfV 2022:
Martin Müller (Sauter lab), Rayhane Nchioua (Kirchhoff lab), Smitha Srinivasachar Badarinarayan (Sauter lab), Sabrina Clever (Volz lab), Lisa-Maire Schuenemann (Volz lab) and Annika Hunzinger (Stertz lab) – CONGRATS!
Despite the online format the meeting was well attended with 25 presentations and 66 registrations and provided opportunities for questions and discussions.

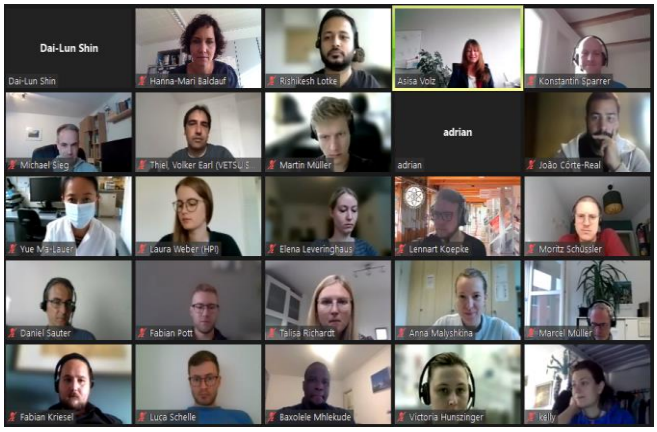
For further information, please visit:

https://immunviro.g-f-v.org/









19th Workshop "Cell Biology of Viral Infections

Eva Herker, Philipps University Marburg
Thomas Hoenen, Friedrich-Loeffler-Institut

This year, the Workshop "Cell Biology of Viral Infection" of the German Society of Virology (GfV) took place from October 20th to 22nd 2021 as an in-person meeting, following 2G rules of Baden-Württemberg, at the Monastery Schöntal, Germany. The theme of this year was "Liquid Organelles", an emerging field in cell biological research that is key to replication of many negative-stranded RNA viruses and likely beyond.

The program included four keynote lectures, 24 oral presentations, and a poster session. The workshop resonance was again great with 48 on-site participants, including among others 38 students and post-docs. The majority of the participants were virologists from Germany, but also scientists from Switzerland, Poland, France and Portugal attended the meeting.

We were very pleased that almost all participants were able to directly stay at the conference site, which stimulated active discussions during the poster session, lunch and dinner gatherings, as well as at the social events.

The workshop opened with the exciting keynote lecture given by Dr. Mark Steffen Hipp from the University of Groningen, Netherlands. His research focusses on the investigation of toxic effects of protein aggregates in phase-separated compartments in the nucleus and the interactions of multiple different disease-associated proteins with the cellular quality control machinery, highlighting the impact of phase separation on neurological disorders.

Dr. Yves Gaudin from CNRS, Institut de Biologie Intégrative de la Cellule in Gif sur Yvette, France, underscored the importance of liquid-liquid phase separation for the formation of replication organelles, in this case of rabies virus, a negative-stranded RNA virus.

The research he presented focused on the exciting interplay between viral factories and innate immunity during rabies virus infection.

The third insightful keynote lecture presented by Dr. Monika Fuxreiter from the University of Padova, Italy, illustrated the biophysical principles that guide the formation of liquid organelles as well as protein interactions in within these condensates. Her work also illustrated the utility of computational tools and *in vitro* studies to elucidate the role of conformational states of proteins in condensation.

Finally, Dr. Lucas Pelkmans from the University of Zurich, Switzerland, presented his exciting work on DYRK kinases, which act as regulators of intracellular condensate formation. His work revealed cellular signaling pathways that can be manipulated to control the formation of liquid organelles.

Sophie Winter from Petr Chlanda's group at the University of Heidelberg, Germany, was awarded the prize for the best oral presentation for her work entitled "Cryo-electron tomography reveals Ebola virus uncoating at low pH".

Georgios Vavouras Syrigos from Michael Schindler's lab at the University of Tübingen, Germany, was selected for his poster on "Regulation of SAMHD1 upon HCMV infection and potential of CDK4/6 inhibitors to suppress HCMV replication in macrophages".

The organizers would like to thank the Society for Virology (GfV), the German Society for Cell Biology (DGZ), and the company ReBlikon for their support.

More information and updates can be found on the workshop's website: https://cellviro.g-f-v.org/

Job posts & Advertisements

In this section, we will post any job vacancies or workshops / conferences. If you are getting aware of any advertisements, please email to jGfV@G-f-V.org or post them on SLACK.

Conferences / Workshops

12 January – 14 January, 2022 (hybrid format)
Working group "Vaccine" Meeting of the German Society for Immunology (DGfI)
https://dgfi.org/arbeitskreise/ak-vakzine/meeting/registration/?sfw=pass1639554285

Early February 2022 (virtual format)
5th SARS-CoV2 workshop of the Society for Virology (GfV)
"Current aspects of the SARS-CoV-2 pandemic"
more information will follow

02 February – 04 February 2022 *(postponed to July 2022)*
1st Workshop "One Health and Zoonotic Viruses of the Society for Virology (GfV)
Goslar, Germany
https://g-f-v.org/events/1st-workshop-one-health-and-zoonotic-viruses-provisional-gfv-working-group/

29 March – 30 March 2022
jGfV ACHIEVE Academy, Munich
more information will follow

30 March – 02 April 2022 (hybrid format)
Annual Meeting of the Society for Virology (GfV)
Munich, Germany
https://www.virology-meeting.de/

Conferences / Workshops

21 March – 25 March 2022
International Conference on Antiviral Research (ICAR)
Seattle, WA, USA
https://www.isar-icar.com/abstracts

04 April – 08 April 2022
EMBO Workshop – Pathogen Immunity and Signaling
Saint-Malo, France
https://meetings.embo.org/event/21-signaling

08 May – 11 May 2022
Annual European Congress of Virology
Gdansk, Poland
https://www.eusv-congress.eu/index.php?id=1919

Open positions

PhD Position
Laboratory of Prof. Dr. Sauter, Institute for Medical Virology, University Hospital Tübingen
Application Deadline: 31 December 2021
https://www.euraxess.de/jobs/716815

PhD position
Laboratory of Dr. Manel, Immunity and Cancer, Institute Curie
Application Deadline 10 January 2022
https://training.institut-curie.org/eureca

Post-doc Position
Laboratory of Prof. Dr. Ciesek, Institute of Medical Virology, Goethe University, Frankfurt
Application Deadline: 02 January 2022
https://www.jobvector.de/jobs-stellenangebote/biologie-life-sciences/wissenschaftliche-r-mitarbeiter-in/wissenschaftlicher-mitarbeiter-postdoc-virologie-163926.html?utm_campaign=google_jobs_apply&utm_source=google_jobs_apply&utm_medium=organic

Post-doc Position
Laboratory of Prof. Dr. Bartenschlager, Molecular Virology, University of Heidelberg
https://www.klinikum.uni-heidelberg.de/kliniken-institute/institute/zentrum-fuer-infektiologie/molecular-virology/about-us/jobs/jobs/jobs-ag-bartenschlager

Post-doc Position
Laboratory of Dr. Maximilian Muenchhoff, Max von Pettenkofer Institute, LMU Munich
Application Deadline: 15 January 2022
https://www.mvp.uni-muenchen.de/fileadmin/diagnostik/Teaserbilder/29.11.21__Postdoc_Virologie_11.2021_Corona_FORCOVID_v2.pdf

Post-doc Position
Laboratory of Dr. Kiera Clayton, University of Massachusetts Medical School
Application Deadline: 17 January 2022
https://www.nature.com/naturecareers/job/postdoctoral-fellow-university-of-massachusetts-medical-school-umass-medical-school-749921

Principal Investigator Position for Cryo-EM/Cryo-ET
Helmholtz Pioneer Campus, Helmholtz Zentrum München
Application Deadline: 16 January 2022
https://jobs.helmholtz-muenchen.de/jobposting/614d69ec59d053897016e208fea1a81528f887040?ref=homepage

Principal Investigator Position
Institut Cochin, Cochin Hospital
Application Deadline: 31 March 2022
https://www.institutcochin.fr/institute/news/institut-cochin-recruits-a-scientist-wishing-to-establish-his-her-independent-team

Professor of Virology
School of Biosciences and Medicine, University of Surrey
Application Deadline: 07 January 2022
https://www.timeshighereducation.com/unijobs/listing/274303/professor-of-virology/

Specialist in Microbiology, Virology and Infection Epidemiology
Institute of Medical Virology and Epidemiology, University Hospital Tübingen
Application Deadline: 31 January 2022
https://g-f-v.org/job/universitaetsklinikum-tuebingen-tuebingen-16-fachaerztin-facharzt-oder-erfahrene-weiterbildungsassistenz-fuer-mikrobiologie-virologie-und-infektionsepidemiologie-w-m-d/

Staff scientist
Laboratory of Prof. Chanda,
Scripps Research
La Jolla, CA, USA
https://www.scripps.edu/careers/?gnk=job&gni=8a7883a87d786170017d90cd832b4eba

Scientific writer
Laboratory of Prof. Chanda,
Scripps Research
La Jolla, CA, USA
https://www.scripps.edu/careers/?gnk=job&gni=8a78859e7ce7e880017d6d6d0fc62fb4

Interview with Prof. Bartenschlager

Prof. Bartenschlager
Head of Molecular Virology, CIID, University Hospital Heidelberg

Professor Ralf Bartenschlager completed his Diploma in Biology *with excellence* at the University of Heidelberg in July 1987, and commenced his PhD on the 'Structural and functional analysis of hepadnaviral polymerases' in the laboratory of Prof. Heinz Schaller, Center for Molecular Biology, University of Heidelberg. After completing his PhD in Molecular Biology with *summa cum laude* in Dec 1990, he worked as a Postdoctoral Fellow at the Central Research Unit of Hoffmann-La Roche AG, Basel, Switzerland,

Interviewers:
Sriram Kumar, PhD Student, Institute of Virology, Munster
Philipp Ostermann, PhD Student, Institute of Virology, Dusseldorf

Questions:

1. What were your initial experiences that helped develop your research interest in virology?

A. *During my studies in Biology at Heidelberg University, I developed two major interests: Botany and molecular biology. The latter was in its infancy because in the 1980s, it did virtually not exist in Germany and only a few professors, who had worked in the US and had come back to Germany, started to set up teaching programs and their own research in this area. While looking for a position as diploma student (equivalent to a Master thesis nowadays) I realized that botany in Heidelberg was very old-school and therefore, I was looking for alternatives. One area I found quite interesting as well was microbiology, especially viruses and their replication strategies. In searching for a diploma position, I found the lab of Prof. Heinz Schaller, who worked on hepatitis B virus, a topic that was very appealing. After having attended his seminar and a practical on microbiology that was essentially the use of molecular biology methods to study microbiological questions, I was given the*

until Dec 1993. He received his Habilitation in Virology from the University of Mainz in Jan 1999, and has taken several academic positions since then. Professor Bartenschlager currently heads the Department of Molecular Virology at the Ruprecht-Karls-Universität Heidelberg, and the Division of Virus-associated Carcinogenesis at the German Cancer Research Center. He also serves as the President of Society of Virology (GfV).

Major scientific achievements:

- Determining HCV genome structure
- Establishment of the first reliable cell culture system (replicon system) for HCV
- Co-development of the first HCV infection system
- First 3D structure models of HCV, DENV and ZIKV replication organelles

opportunity to work in Heinz Schaller's lab, where I learned a lot about molecular virology. Since then, it was clear this will be the topic of my PhD and any possible academic work thereafter.

2. How did you identify your niche in virology research? How did it change over the past years?

A. *After my PhD in the Schaller lab, I decided to change directions, both with respect to profession and topic wise. I joined a big pharma company and started to work on hepatitis C virus. The reason was very simple: This virus had been discovered just one year before I joined the company and it was clear, it's a medical problem and we have no drugs to treat patients. My job as postdoctoral fellow was to set up a HCV program. The first year was horrible and I did almost exclusively RT-PCR, trying to molecularly clone HCV genomes from patient materials. Once I had these clones, it was straightforward: determine the genome organization of HCV, characterize the viral protease and develop screening assays. In those days, everything was pioneering work, because we knew nothing about this virus and I was allowed to publish my data, which is not self-evident when working in big pharma. In addition, since I had a postdoc position in this company for 3 years with no guarantee for succession, I had negotiated with my boss, who was very generous and supportive, that I will be allowed to take all*

reagents I had created with me for doing academic research (not for profit).
At the end of my term, I decided to leave the company, because I wanted to be more independent. Therefore, I took the opportunity to move to the University of Mainz, where a newly founded institute for virology was set up. In these days, HCV research did not exist in Germany and it was obvious, I had a head-start and a niche to do my own independent research. Since then, together with my team I continued working on this virus, always trying to stay focused and within our niche, while at the same time being open all the time for new collaborations and supporting other groups to set up their own HCV research programs by using the tools we had created.
The HCV topic dominated our work until around 2010 when it became clear that in the not too far future, antiviral drugs to treat chronic hepatitis C will become available. We also anticipated that the cure rate will be high and therefore, funding and interest in HCV will turn down. Therefore, in fact already in 2006, I started to work on Dengue virus, another major unmet medical need. This new topic allowed easy transition when HCV activities where shrinking as curative therapy became available in 2014. Since then we continued on Dengue virus, expanded into other flaviviruses such as Zika virus, and started a few new projects back on hepatitis B virus and more recently, on SARS-CoV-2, the latter for obvious reasons.

3. Which of your career stages were the most important and decisive for your current position?

A. *I think every stage was important. My diploma was important, because it fixed my interest in molecular virology. My PhD provided plenty of opportunities to grow, both in experimental skills and in scientific thinking as well as gaining independence. Moreover, I learned from my mentor Heinz Schaller how the academic system works and the most important facts to consider when doing experiments and presenting data.*

I had often been confronted with decisions by upper management that in retrospect were understandable from an economic point of view, but did not take into account personal performance and scientific logic. After that it was clear to me, I will go for a position in academia. My days in Mainz were essential, because I had to learn how to run an independent research group. It was learning by doing, because there were no courses or special trainings as it is the case today. In retrospect, it was the most productive time in my scientific life. I remember well late evenings with my teams, standing in the lab and pipetting like hell to keep our projects running. Although our attempts to grow HCV in the lab were constant failures and we had phases of depression, asking ourselves how we can survive on the long run without a system to grow the virus we want to study, it was a most memorable time. Finally, after my move back to Heidelberg, I had to learn how to set up a department, a much bigger enterprise than a research group. Also this was learning by doing and I was challenged in many ways.

4. Who were your former mentors, and how did they influence you and your career trajectory?

A. *I think I had two mentors that influenced my professional life. The first one was my school teacher giving wonderful lectures about biology. He woke up my interest in biology and Life Sciences in general, although in those days this term was not used. The second one was Heinz Schaller, my PhD supervisor who taught me how to do science, how to develop a project and the importance of proper presentation of data. In addition, he had gathered a wonderful team of molecular virologists from whom I learned a lot how to conduct assays, blots, virus purification and others, but most notably molecular cloning. That was an essential know-how that allowed me to do things that otherwise I could not have done, such as molecular cloning of complete HCV genomes.*

5. Heading a group working on Hepatitis and Flaviviruses, how did you find the calling to work on SARS-CoV-2 during this pandemic?

A. *I remember the day when the first patient "arrived" in Heidelberg and colleagues from the clinic and in our department were asking for assays to diagnose the infection and to detect antibodies. In addition, it was rapidly clear that this will become a major medical problem. Therefore, we instantly applied for all necessary permissions and teamed up with our colleagues in the department to upgrade our BSL3 lab and to set up required assays. Within 3 weeks, everything was up and running and we could culture the virus. During the initial lock-down, it was not possible to enter the lab or the university campus, unless it was for the sake of SARS-CoV-2 related work. Therefore, many colleagues on campus volunteered to provide their expertise and technology to work on Covid-related projects. To avoid too much redundancy and overlap, we set up a virtual network, called FightCovid@Heidelberg that served as communication platform for the around 110 Covid projects conducted in Heidelberg and Mannheim clinics, the university and extra-university institutions such as EMBL and DKFZ. Today, SARS-CoV-2 has become a major research direction in my lab, because it is also a plus-strand RNA virus and fits very well to the projects we were doing before the pandemic related to virus – host cell interaction.*

6. How has academia changed now from what it had been during your educational phases?

A. *Since my entry into the academic world in the 1980s (I did my PhD in 1989), there have been enormous changes. From a scientific point of view, we now have technologies and tools at hand, we did not even dream of in those days. For instance, PCR had not been invented and sequencing of a plasmid was your own task that took you around a week to confirm e.g. that the mutation you wanted to introduce indeed was there. Also, most reagents you had to prepare on your own, including in some cases*

restriction enzymes, simply because they were not commercially available.
Today, most people buy a kit that is available for almost any kind of desired assay. Although this is much faster, the down-side is that often people no longer know the details of the method underlying the assay. Nevertheless, given all these new methods, studies are much more holistic and cover e.g. whole cell transcriptomes rather than looking at individual genes as we did in the past. Obviously, this makes research much more demanding and depending on the availability of technologies.
Therefore, collaborations have never been as important as they are today.
From a personal point of view, the support of young scientists during their academic career is much stronger as it was during my days. For instance, there are numerous training programs for students during their PhD phase, we have structured graduate programs with supporting systems, and perhaps too stringent time scales, and a continuously growing offer for soft-skills training. This did not exist during my time as student and independent group leader and all of that was learning by doing.

7. What is your rewarding takeaway from mentoring students/postdocs towards their career goals?

A. *The reason why I chose to go into science was my eager interest in this topic. In this respect, my biggest pleasure is to talk with my team members about science, to brainstorm when it comes to solving a problem or to interpret results that are unexpected. The biggest reward is to see people in my team growing, to see how they realize their potential to do science and how they make their way in the academic system or in industry. A true privilege is to help these people to make their career and to stay in contact with them even many years after they have left and to continue collaboration.*

8. If you could change something in the scientific system (e.g. Peer-Review, Funding, Policies, etc.), what would it be? And how do you hope to realize that change if you were given an opportunity?

A. *What I would change is to implement a career system that takes into account the specifics of a career in science. We do have a 12-years rule that I find inadequate for making a career in science, especially since this time limit starts counting on the first day of a PhD or even earlier. What we need is a system that follows a tenure track path, with interim reviews and the possibility, after good performance, to become permanent. Although scientists have often expressed their concerns, made suggestions did not find entry into legal regulations.*

A second aspect I would like to see changed is to break the power of high-impact journals. Of course, everyone aims for such journals, but getting a paper published there or not also is a matter of luck. For instance, if the editor likes the topic, you have a good chance; it that's not the case, you will most likely not make it. Moreover, when you get reviews from 3-5 reviewers, the chances are high that there is always one who dislikes your study and in that case you will need an editor that likes and can judge your study. To take out this "luck component" EMBO has the rule to not consider the impact factor, but instead the relevance of a paper as such. I think that's the right way that should be considered much more broadly.

Thank you very much, Prof. Bartenschlager, for this interview!

Announcement

SNEAK PEAK FOR ACTIVITIES IN 2022

- Virology lecture series
- Awards for the best seasonal papers
- Lab rotation scholarships

Are you interested in joining the jGfV board as an official member?

You will be electing two official representatives among you (students to PostDocs/physicians in training) after the annual GfV meeting in Munich! More information will follow soon…
If you are interested, then please send your short CV and a letter of motivation until **28th of February** to jGfV@G-f-V.org.

Did you like the first newsletter of the junge GfV? If yes, then do not forget to register on the homepage to receive the next issues ☺.

With that we wish you happy holidays and all the best for 2022!

IMPRESSUM

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