



Newsletter April 2021

Welcome to the 23rd edition of the PopGen ALUMNI newsletter!

Follow us on Social Media

<https://twitter.com/PopGenViennaPhD>

<https://www.youtube.com/channel/UCAdGx2zyQNYvti9Cr1muhUg>

Join our Tuesday webinars:

<https://www.popgen-vienna.at/news/seminars/>

Do you know of suitable candidates for PopGen Vienna?

Our call for PhD students is open – please help us spread the word!

Application deadline: May 16, 2021

Flyer for download on the website:

<https://www.popgen-vienna.at/media/popgenviennafllyertopics.pdf>

<https://www.popgen-vienna.at/application/procedure/>

Master's Program Evolutionary Systems Biology

Call for master students open until May 5th

<http://evolsysbio.univie.ac.at/>

Recent events and news

April 2021: New associated faculty

We're happy that **Rui Borges** (Kosiol group), just joined the Vienna Graduate School of Population Genetics as associated faculty and new PI.

March 2021: PhD defense

Congratulations to **Martin Pontz** (Bürger group) on successfully defending his thesis "Effects of epistasis in population genetic two-locus models" online.

March 2021: Faculty News

Congratulations to faculty member **Barbara Wallner** on completing her habilitation procedure at Vetmeduni Vienna!

February 2021: Alumni News

Alumnus **Thomas Taus** was promoted to Teamleader for Reporting and Analysis at Porsche Informatik GmbH in Salzburg, Austria. Congratulations!

February 2021: Marie Skłodowska-Curie Fellowship

Congratulations to **Anna Maria Langmüller**, she received a Marie Skłodowska-Curie Individual Fellowship for two years of postdoctoral research at Cornell University, followed by one year at Univ. of Vienna!

January 2021: Poster prize

Congratulations to **Christina Hedderich** on winning the 1st prize for her poster "Population genomics shows last European stand of *Artemisia laciniata* is diverse despite population size" at the poster competition of the virtual edition of the 54th Population Genetics Group Meeting.

December 2020: Award of Excellence

Congratulations to our alumna **Sabine Felkel**! She received the 3.000 Euro Award of Excellence by the *Austrian Federal Ministry of Education, Science and Research* for her PhD thesis in the Wallner group "Y-chromosomal evolution in Equids: Deciphering the history of horses using Y-chromosomal NGS data" that she defended in September 2019.

December 2020: Xmas Zoom dinner

We had a fun zoom dinner chatting in small breakout groups on December 18.

December 2020: Faculty meeting

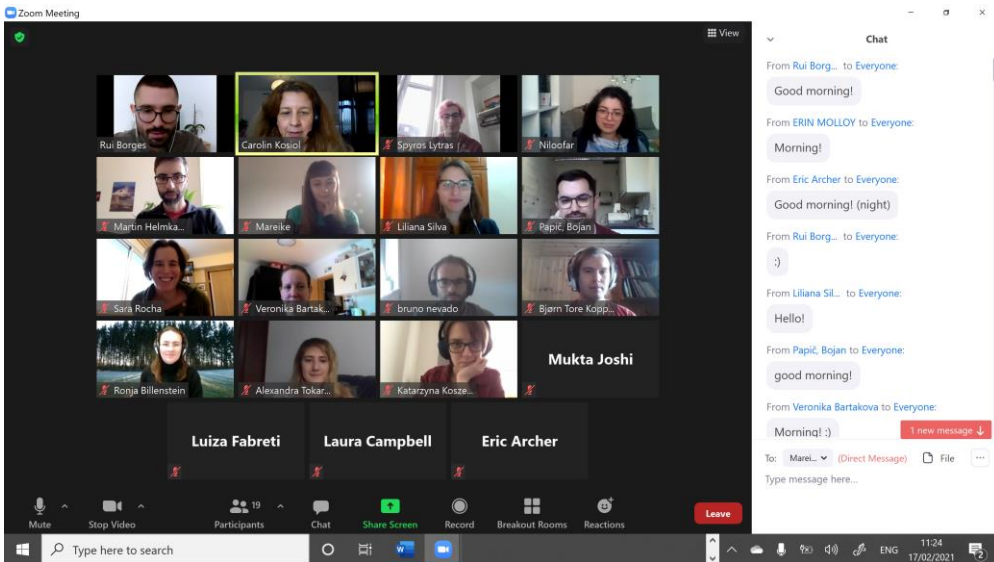
The faculty members met online on December 7.

Alumni lab portraits

We feature a brief report about one of PopGen's graduate and faculty alumni in the Newsletter. This time, PopGen Vienna faculty alumna **Carolyn Kosiol** gives us some insight into her research environment at the Univ. of St. Andrews (UK):

"I moved to the University of St Andrews as a lecturer in 2017. My research group consists of two PhD students in St Andrews and one postdoc at the Vetmeduni Vienna. We work on theoretical topics at the interface of population genetics and phylogeny to understand the evolutionary histories of species.

Pre-Covid, I would frequently travel to Vienna to meet all group members additional to online meetings. Now we still meet online with even more people. E.g., for the Mathematical, Inferential and Computational Phylogenomics (MicPhy) workshop in February 2021, we dragged participants early out of bed to teach them our IQ-Tree-PoMo and RevBayes-PoMo softwares.



St Andrews is Scotland’s oldest university and a smallish student town on the East coast. On sunny spring days (yes, they do exist) everyone would be out and about not just the seagulls:



Nevertheless, for the students that are still around, the university has converted the green lawns to socially distanced meeting places.



Also the lobster has been lucky as it didn’t end up in one of the cooking pots.”

Out of sight, out of mind?

Experiences of our students abroad

Many of our students choose to spend three to six months in foreign labs during their study time. **Aglaia Szukala** (advisor Ovidiu Paun) was hosted by Daniel Schubert at FU Berlin (DE) as a guest researcher for three months. Aglaia spend another three months at the lab of Alex Widmer at ETH Zurich (CH):

“At the end of August 2020, I left Vienna to join the Schubert lab at Free University Berlin for three months. Another stay in the Widmer Lab at ETH Zürich would follow from December to March 2021. In the middle of the covid-19 pandemic, I was starting an abroad journey across two countries, bringing my three years old daughter and partner along. Not easy, but it turned out to be worthwhile.

The aim of my stay at the Schubert lab (Epigenetics of plants) was to test if genome methylation might be involved in the adaptation to different ecological niches in the plant *Heliosperma pusillum*. Previous analyses of my PhD work suggested that low and high elevation ecotypes in this species have evolved different degrees of expression plasticity, likely linked to different methylation. For this task, I grew both ecotypes on methylation inhibiting medium plus controls and performed phenotyping to assess the effects of the treatment. It was a challenge to establish the correct procedure and collect the data within three months. But I received a lot of help and support, and was rewarded with interesting results, suggesting that the ecotypes indeed cope differentially with methylation perturbations.

Personally, coming from a more bioinformatic background, I learned a lot of lab techniques and enjoyed the molecular and experimental perspective on plant epigenetics very much. Despite masks and social distancing, I met other members of the group regularly in the lab and had a very nice time with them. I wish to thank Theresa, Luca, Claire, Daniel and Lea for making my stay in the lab a great and valuable time.

I spent the remaining three months of my abroad stay in Zürich. The research group of Alex Widmer has a strong focus on the genetic basis of plant adaptation and there is a great overlap with my PhD project. Therefore, I was very excited about joining them to learn more about selection scans and apply their newly developed methods to my study system.

Zürich is a picturesque small town, rising on a lake and surrounded by mountains. Despite the sad combination “cold winter plus covid-19 restrictions”, I enjoyed discovering the natural surroundings of the city together with my family. Unfortunately, my contacts to the members of the lab were reduced to the minimum and mostly found place on-line. This was very frustrating. Nevertheless, I had a valuable exchange with many researchers and especially Simone and Hirzi. Our long meetings were very productive and insightful and helped me gaining new perspectives on my work. I am also very thankful to Alex and my supervisor Ovidiu for their support and help in obtaining an EMBO short-term fellowship and making this stay possible.”



The beautiful view I had from my apartment in Zurich, during long days of home-office.

Upcoming seminars

Our Tuesday seminars have gone virtual, so you can join us from all over the world!

Sign up here to receive reminders and links for the remaining exciting webinars of the term by **Tiffany Taylor, David Begun, Katie Lotterhos, Göran Arnqvist, Isabel Gordo, Conrad Burden, David Reich, Sarah Signor and Jeremy Berg:**

<https://forms.gle/nKqGmmTe4yVUUBot6>

Stay safe and healthy, and have a wonderful Spring and Summer!

Publications of our students so far in 2021

Wölfel B, te Rietmole H, Salvioli M, Kaznatcheev A, Thuijsman F, Brown JS, Burgering B and Staňková K. The contribution of evolutionary game theory to understanding and treating cancer. *MedRxiv* 2020.12.02.20241703. (2021) doi: 10.1101/2020.12.02.20241703
<https://www.medrxiv.org/content/10.1101/2020.12.02.20241703v3>

Burny C, Nolte V, Dolezal M and Schlötterer C. Highly parallel genomic selection response in replicated *Drosophila melanogaster* populations with reduced genetic variation. *BioRxiv* 2021.04.06.438598. (2021) doi: 10.1101/2021.04.06.438598
<https://www.biorxiv.org/content/10.1101/2021.04.06.438598v1.article-info>

Johnson KD, Beiglböck M, Eder M, Grass A, Hermisson J, Pammer G, Polechová J, Toneian D and **Wölfel B**. Disease momentum: Estimating the reproduction number in the presence of superspreading. *Infect. Dis. Model.* (2021) doi: <https://doi.org/10.1016/j.idm.2021.03.006>
<https://www.sciencedirect.com/science/article/pii/S2468042721000270?via%3Dihub>

Bayle V, Fiche J-B, **Burny C**, Platre MP, Nollmann M, Martinière A and Jaillais Y. Single-particle tracking photoactivated localization microscopy of membrane proteins in living plant tissues. *Nat. Protoc.* (2021) doi: 10.1038/s41596-020-00471-4
<https://www.nature.com/articles/s41596-020-00471-4>

Langmüller AM, Dolezal M and Schlötterer C. Fine mapping without phenotyping: Identification of selection targets in secondary Evolve and Resequencing experiments. *BioRxiv* 2021.01.27.428395. (2021) doi: 10.1101/2021.01.27.428395
<https://www.nature.com/articles/s41596-020-00471-4>

Lai W-Y, Nolte V, Jakšić AM and Schlötterer C. Evolution of phenotypic variance provides insights into the genetic basis of adaptation. *BioRxiv* 2021.01.19.427260. (2021) doi: 10.1101/2021.01.19.427260
<https://www.biorxiv.org/content/10.1101/2021.01.19.427260v1>

Lai W-Y and Schlötterer C. Evolution of gene expression variance during adaptation to high temperature in *Drosophila*. *BioRxiv* 2021.01.19.427270. (2021) doi: 10.1101/2021.01.19.427270
<https://www.biorxiv.org/content/10.1101/2021.01.19.427270v1>

See all publications [here](#)