

# Newsletter December 2020

Welcome to the 22<sup>nd</sup> edition of the PopGen ALUMNI newsletter!

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> Sign up for online Tuesday seminars: 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: January 17, 2021

Flyer for download on the website: <u>https://www.popgen-vienna.at/media/popgenviennaflyertopics\_1.pdf</u>

## Recent events and news

### October 2020: kick-off for monthly virtual dinners

In an effort to alleviate the missing social interactions during the crisis, we held a virtual Zoom dinner with 30 participants. After the "plenary" welcome, we randomly divided into smaller groups for informal and much appreciated conversation among all the isolation.



#### **October 2020: PhD defenses**

Congratulations to our TWO new PhDs!

**Kerstin Spitzer** (Futschik group) defended her thesis "Improvement of statistical methods used in population genetics" online.

**Gökce** Aköz (Nordborg group) defended her thesis "Rediscovering *Aquilegia* as a model system while chasing chromosome four" also during a virtual exam.

#### **October 2020: study grants**

Congratulations to **Aglaia Szukala**! Aglaia received an EMBO short term grant for her 3-month research stay at the ETH Zürich, and an Erasmus+ grant for 3-months at FU Berlin.

#### September 2020: DZG Graduate Meeting

Faculty of PopGen Vienna organized the 25th DZG Graduate Meeting Evolutionary Biology. It was planned to hold the meeting at the Vetmeduni Vienna campus but due to the Sars-CoV-2 pandemic we were forced to hold the meeting online. Nevertheless, the meeting attracted many PhD students and interested colleagues. More information about the past meeting is available <u>here</u>. Several talks have been added to our <u>YouTube channel</u>.

#### September 2020: Seminars go online

Due to the pandemic, our seminars were turned into virtual visits and webinars for the upcoming Winter term. As the semester progresses, we'll post webinars to our <u>YouTube channel</u>.

The webinars started off with a talk by Günter Wagner (Yale Univ.) and as many as 50 people had tuned in! If you'd like to sign up, please have a look here: https://www.popgen-vienna.at/news/seminars/

#### August 2020: Evolution explained to kids - online

The 2020 edition of "Kinderuni" (Children's University) could unfortunately not run "live" due to the Covid-19 crisis. Nevertheless, three of our students joined the efforts of Kinderuni to provide a fun, safe virtual contribution. **Christina Hedderich**, **Burcin Yildirim** and **Elif Bozlak** prepared posters about evolution of horses in three languages for curious young researchers. "We were disappointed that we couldn't interact with the kids, and show them evolution under the microscope. It was a challenge to come up with a concept but it turned out to be fun to collaborate for the poster from our individual home offices."

#### August 2020: PhD defense

Congratulations to **Christos Vlachos** (Kofler group) on the successful (online) defense of his thesis "Towards the optimization of E&R experiments".

#### May 2020: Marshall Plan Scholarship

Congratulations to **Marta Pelizzola** on receiving one of the prestigious Marshall Plan Foundation grants to support her planned 6-month research stay at the Univ. of Chicago.

## Alumni lab portraits

We feature a brief report about one of PopGen's graduate and faculty alumni in the Newsletter. This time, PopGen Vienna alumnus **Juraj Bergman** gives us some insight into his postdoc experience at Bioinformatics Research Centre (BiRC) at the Univ. of Aarhus (Denmark):

"I've been in Aarhus with Mikkel Schierup's group for about two years now (still a year to go), and I'm working on population genomics of humans and great apes with a focus on the evolution of sex chromosomes. I have finished two projects which are currently in review (one about GC-biased gene conversion of transitions and transversions in human and great apes, and one about the sex chromosome evolution in the marmoset). In the next year, I will be finishing up a project on population genetics of the pseudoautosomal region, and starting an analysis and method development for studying single-cell expression data of spermatogenesis in great apes (I was thankfully not involved in the sampling).

Given the current pandemic, we've been on a periodical lockdown in Denmark, which has made work a bit challenging (as it has for all of us I think) - hopefully, better days are coming. The situation has however given me time to explore every inch of my living room from my couch, and generally be more hygge (as the Danes would say)."



Rooftop BBQ that we had when corona wasn't that big a deal vs. Denmark's famous trademark Lego producing figures wearing masks.

# **Upcoming seminars**

Our Tuesday seminars have gone online in October, so you can join us from all over the world! Sign up here to receive a one-time mailing containing a link valid for the remaining webinars of the running term: <u>https://forms.gle/nKqGmmTe4yVUUBot6</u>

# Wishing you all to stay safe and healthy – and an energetic start into 2021 (may it bring us back some normalcy)!

# Publications of our students so far in 2020

Schwarz F, Wierzbicki F, Senti K-A and Kofler R. Tirant stealthily invaded natural *Drosophila melanogaster* populations during the last century. *Mol. Biol. Evol.* (2020) doi: 10.1101/2020.06.10.144378 https://academic.oup.com/mbe/advance-article/doi/10.1093/molbev/msaa308/6008717

**Hsu S**, Belmouaden C, Nolte V and Schlötterer C. Parallel gene expression evolution in natural and laboratory evolved populations. *Mol. Ecol.* mec.15649. (2020) doi: 10.1111/mec.15649 <u>https://onlinelibrary.wiley.com/doi/full/10.1111/mec.15649</u>

Langmüller AM, Nolte V, Galagedara R, Poupardin R, Dolezal M and Schlötterer C. Fitness effects for Ace insecticide resistance mutations are determined by ambient temperature. *BMC Biol.* 18(1), 157. (2020) doi: 10.1186/s12915-020-00882-5 <a href="https://bmcbiol.biomedcentral.com/articles/10.1186/s12915-020-00882-5">https://bmcbiol.biomedcentral.com/articles/10.1186/s12915-020-00882-5</a>

Jakšić AM, Karner J, Nolte V, Hsu SK, Barghi N, Mallard F, Otte KA, Svečnjak L, Senti KA and Schlötterer C. Neuronal function and dopamine signaling evolve at high temperature in *Drosophila*. *Mol. Biol. Evol.* 37(9), 2630–2640. (2020) doi: 10.1093/molbev/msaa116 https://academic.oup.com/mbe/article/37/9/2630/5836827

**Pelizzola M**, Behr M, Li H, Munk A and Futschik A. Multiple haplotype reconstruction from allele frequency data. *bioRxiv* 2020.07.09.191924. (2020) doi: 10.1101/2020.07.09.191924 https://www.biorxiv.org/content/10.1101/2020.07.09.191924v1.full

Weilguny L, **Vlachos C**, **Selvaraju D** and Kofler R. Reconstructing the invasion route of the Pelement in *Drosophila melanogaster* using extant population samples. *Genome Biol. Evol.* (2020) doi: 10.1093/gbe/evaa190

https://academic.oup.com/gbe/advance-article/doi/10.1093/gbe/evaa190/5903738

Gutzat R, Rembart K, Nussbaumer T, Hofmann F, **Pisupati R**, Bradamante G, Daubel N, Gaidora A, Lettner N, Donà M, Nordborg M, Nodine M and Mittelsten Scheid O. *Arabidopsis* shoot stem cells display dynamic transcription and DNA methylation patterns. *EMBO J.* e103667. (2020) doi: 10.15252/embj.2019103667

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Langmüller AM and Schlötterer C. Low concordance of short-term and long-term selection responses in experimental *Drosophila* populations. *Mol. Ecol.* mec.15579. (2019) doi: 10.1101/759704 https://onlinelibrary.wiley.com/doi/abs/10.1111/mec.15579

**Setter D**, Mousset S, Cheng X, Nielsen R, DeGiorgio M and Hermisson J. VolcanoFinder: Genomic scans for adaptive introgression. *PLoS Genet*. 16(6), e1008867. (2020) doi:

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5

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See all publications <u>here</u>