



UPPSALA
UNIVERSITET

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IEG News

May edition

News from the administration

Vacation

Plan your vacation before summer together with your manager. Read more about standard vacation for teachers, researcher etc. <https://mp.uu.se/sv/web/info/anstallning/semester/schablonsemester-larare-forsk>

And how technical/administrative staff register vacation <https://mp.uu.se/sv/web/info/anstallning/manualer-anstallning/semester-manual>

Note: If you have more than 30 saved vacation days you have to use them latest December 31, 2022.

TBE vaccine

If you are planning to do field work in areas where TBE is present you can take vaccine through Previa. Employees make an appointment by phone: 0771-230000 or <https://www.previa.se/tjanster/vaccination-och-provtagning/bestall/>

Enter the payment reference (146) and the name of your nearest manager. Master students and hourly employees are requested to contact HR before contacting Previa.

Recruitment before summer?

Reminder: If you are planning to hire someone please contact Sandra or Jenny no later than Thursday June 10th.

UU:s wellness challenge - HITTA UT 2021

Hittaut is Uppsala's largest wellness project where you and your colleagues get exercise as you find new places around Uppsala and strengthening the team spirit at your workplace. It's over 160 checkpoints placed at beautiful and interesting sites around Uppsala. Your task is to use the map or your GPS device to find these checkpoints. The more checkpoints you'll find, the more exercise you'll get and the bigger the chance to win prizes. Register at the website or directly in the app and choose "Uppsala universitet – anställda" as organization and then send an e-mail to sandra.gustafsson@ebc.uu.se to join our team.

<https://www.orientering.se/provapaaktiviteter/hittaut/uppsala/english-how-it-works/>

Upcoming PhD defense

Giulia Zacchello: Thursday June 10 at 10:00 in Zootissalen

Zoom: <https://uu-se.zoom.us/j/68573386025>

Title: Ecology and evolution of local adaptation in *Arabidopsis thaliana*

Opponent: Dr. Xavier Pico, Estacion Biologica Doñana, CSIC, Spain

New publications

Per Alström and co-workers have published a new article with the title “Most genomic loci misrepresent the phylogeny of an avian radiation because of ancient gene flow”. Phylogenetic trees based on genome-wide sequence data may not always represent the true evolutionary history for a variety of reasons. One process that can lead to incorrect reconstruction of species phylogenies is gene flow, especially if interspecific gene flow has affected large parts of the genome. We investigated phylogenetic relationships within a clade comprising eight species of passerine birds (Phylloscopidae, *Phylloscopus*, leaf warblers) using one *de novo* genome assembly and 78 resequenced genomes. On the basis of hypothesis-exclusion trials based on D-statistics, phylogenetic network analysis, and demographic inference analysis, we identified ancient gene flow affecting large parts of the genome between one species and the ancestral lineage of a sister species pair. This ancient gene flow consistently caused erroneous reconstruction of the phylogeny when using large amounts of genome-wide sequence data. In contrast, the true relationships were captured when smaller parts of the genome were analyzed, showing that the “winner-takes-all democratic majority tree” is not necessarily the true species tree. Under this condition, smaller amounts of data may sometimes avoid the effects of gene flow due to stochastic sampling, as hidden reticulation histories are more likely to emerge from the use of larger data sets, especially whole-genome data sets. In addition, we also found that genomic regions affected by ancient gene flow generally exhibited higher genomic differentiation but a lower recombination rate and nucleotide diversity. Our study highlights the importance of considering reticulation in phylogenetic reconstructions in the genomic era.

<https://doi.org/10.1093/sysbio/syabo24>

Stefan Bertilsson and co-workers have published a new article with the title “The Fennoscandian Shield deep terrestrial virosphere suggests slow motion ‘boom and burst’ cycles”. The deep biosphere contains members from all three domains of life along with viruses. Here we investigate the deep terrestrial virosphere by sequencing community nucleic acids from three groundwaters of contrasting chemistries, origins, and ages. These viromes constitute a highly unique community compared to other environmental viromes and sequenced viral isolates. Viral host prediction suggests that many of the viruses are associated with Firmicutes and Patescibacteria, a superphylum lacking previously described active viruses. RNA transcript-based activity implies viral predation in the shallower marine water-fed groundwater, while the deeper and more oligotrophic waters appear to be in ‘metabolic standby’. Viral encoded antibiotic production and resistance systems suggest competition and antagonistic interactions. The data demonstrate a viral community with a wide range of predicted hosts that mediates nutrient recycling to support a higher microbial turnover than previously anticipated. This suggests the presence of ‘kill-the-winner’ oscillations creating slow motion ‘boom and burst’ cycles.

<https://www.nature.com/articles/s42003-021-01810-1>

News from Environmental work

Interesting study that shows that digital meetings and streamed services also have a major environmental impact.

Video meetings are of course a fantastic opportunity to avoid making trips with great climate impact. It can still be good to keep in mind that it is a small environmental benefit to turn off the camera, at the meetings where it



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feels okay. A new study by MIT, Purdue University and Yale University shows that an hour-long videoconference with the camera turned on causes 150-1000 g of carbon dioxide emissions. For comparison, it will be about 2.5 kg of carbon dioxide from a liter of petrol. 2-12 liters of water and a land area about the size of an iPad Mini are also used for the meeting hour. If you turn off the camera during the meeting, the footprint on the environment may decrease by 96%. Another thing that the study addresses is that the video quality of Netflix and other streaming services is one of the biggest factors for the services' environmental footprint. A person who streams with high video quality, which is often the default choice, 4 hours a day causes 53 kg of carbon dioxide emissions in one month. If the person changes to standard quality, it will only be 2.5 kg. Before the pandemic, the internet accounted for about 3.7% of the world's greenhouse gas emissions. Many countries have reported at least a 20% increase in Internet use since March.

Here is a link to the study:

<https://news.mit.edu/2021/how-to-reduce-environmental-impact-next-virtual-meeting-0304>

Webinar on upcoming funding opportunities

This is a webinar on upcoming funding opportunities within EIC Pathfinder, in Horizon Europe. Pathfinder supports the exploration of bold ideas for radically new technologies. It welcomes the high-risk / high gain and interdisciplinary cutting-edge science collaborations that underpin technological breakthroughs.

Pathfinder goes beyond what is already known. Visionary thinking can open up promising avenues towards powerful new technologies.

Projects typically involve consortia of researchers and other partners from at least three different countries, but there are also opportunities for individual teams and small consortia (two partners).

Grants of up to 3 to 4 million euro support early stage development of future technologies (e.g. various activities at low Technology Readiness Levels 1-3), up to proof of concept. Pathfinder projects can also receive additional funding for testing the innovation potential of their research outputs.

Deadline for signing up is on June 2nd

<https://doit.medfarm.uu.se/bin/kurt3/kurt/21643>

Bird watching and lecture

Here is a new film by Per Alström, with birds in the local area:

https://youtu.be/gVefleTG_Bk

During "Lunch with Linnaeus and his sciences" Per Alström also held a lecture (in swedish) and here is a link :

<https://youtu.be/nHA-G65B784>