The European Society for Evolutionary Biology

eseb.org/society/



THE EUROPEAN SOCIETY FOR EVOLUTIONARY BIOLOGY

Founded in 1987, the <u>European Society for Evolutionary Biology</u> (ESEB) is an academic society that brings together over 2000 biologists from Europe and beyond. In this exclusive interview, we speak with Professor Astrid Groot, President of ESEB, who discusses the many ways that the society supports scientists and helps to advance the diverse field of evolutionary biology.



To begin, please tell us a little bit about the history and mission of ESEB.

The European Society for Evolutionary Biology (ESEB) was <u>founded</u> by Stephen Stearns on 28 August 1987 in Basel, Switzerland, to provide a European focus, as the Society for the Study of Evolution was mainly US based. The founding of ESEB was closely linked to the launching of the Society's journal, the *Journal of Evolutionary Biology*.

ESEB aims to support the study of organic evolution, fosters exchange and communication within the evolution community, countering inequalities within the community, educating the public about evolution and why it is important, and lobbying decision makers to support evolutionary research and education. Beside publishing the Journal of Evolutionary Biology and co-publishing Evolution Letters, the society organises a biannual congress (see https://www.eseb2022. cz/en/symposia) and supports other events to promote advances in evolutionary biology.

ESEB also financially supports activities to promote a scientific view of organic evolution in research and education.

Who are your members, and what are their areas of expertise?

We have 99.99% researchers, of which about 50% are students and 50% post-PhD scientists. The research areas represented are very broad, ranging from evolutionary ecology to molecular evolution, and from plants and mites to mice.

For example, the organiser of this year's ESEB congress, Lukas Kratochvil, studies the evolution of sexual dimorphism, behaviour and reproductive biology in lizards, while last year's ESEB president Ophelie Ronce focuses mostly on plant communities and integrates ecological and evolutionary responses to climate change. The ESEB secretary Ellen Decaestecker investigates hostpathogen interactions in water fleas and spider mites, while ESEB treasurer Koen Verhoeven studies epigenetic variation in asexually reproducing dandelions. Finally, my research focuses on how evolution of sexual communication in moths affects speciation.

The list of 40 symposia at our upcoming ESEB congress in Prague also shows the breath of topics of our members, as this ranges from sex chromosome evolution, evolutionary ecology of mating systems, cognitive evolution and eco-evolutionary dynamics in invasive species to molecular evolution, evolution of antibiotic resistance and microbiomes in the wild.

In what ways does ESEB support research in evolution and related fields?

ESEB supports the publishing the society's journals, *Journal of Evolutionary Biology and Evolution Letters*. ESEB also organises the biannual ESEB congress and supports the yearly European meeting of PhD students in Evolutionary Biology (EMPSEB).

In addition, the society funds travel awards to the ESEB congress and the conferences of the Society for the Study of Evolution (see travel awards to ESEB and SSE congresses), mobility awards to visit labs or do fieldwork, special topic networks, and progress meetings. These funds are mostly to foster connections between evolutionary societies and communication with national evolutionary communities.





ESEB also promotes careers and highlights research of evolutionary biologists by awarding prizes, such as the Stearns Graduate Student Prize for best student paper, the John Maynard Smith Prize for early career researchers, the Presidents' award for mid-career scientists, and the Distinguished Fellows award for senior researchers.

This August, the ESEB 2022 Congress will be held in Prague. When thinking about this upcoming event, what are you most excited about?

After two years of online conferences and meetings, I'm mostly excited to see everyone in person again and to be able to interact with people not only through presentations with related discussions, but also by having coffee, drinks and dinner together and meeting each other randomly in the hallways, as collaborations frequently start in these informal settings.

Also, live meetings give the opportunity to hear talks that I would probably not choose to listen to online. For example, at the last live ESEB meeting I was tired of moving between rooms at one point and then heard an amazing talk on tRNA evolution that I would have missed otherwise, which led to a new collaboration.

Tell us a bit more about ESEB's efforts in public outreach and education, such as the Outreach Initiative Fund and Evolution Matters. Why is outreach particularly important in evolutionary biology and related fields?

The Outreach Initiative is one of the oldest and most successful initiative of ESEB. We find it crucially important to ensure that evolution is generally accepted in all communities and societies, including religious ones. One great example of an ESEB outreach initiative is the <u>EvoKE project</u>, which stands for Evolutionary Knowledge for Everyone. The EvoKE project 'seeks to contribute to a world where people understand evolution and can use scientific knowledge and skills to make informed decisions that address societal problems, thereby contributing to an inclusive, sustainable and resilient future.'

This project consists not only of researchers, but also educators, journalists, communicators and artists, who all actively reach out to promote evolution at all levels of our society and to help for example educators and policy makers to understand what evolution is and is not.

Education is important, because evolution is a fundamental scientific principle that governs the natural world and impacts the human condition. The coronavirus outbreak clearly showed that we humans are part of the network and evolution of life.



Other obvious examples are antibiotic resistance and resistance to insecticides.

Basically, evolution describes change through time, where time is measured in generations instead of years. We need to promote research and factual discourse and counter pressure against science, such as from creationists.

Evolution does not contradict or oppose religious views; in fact, several great evolutionary biologists were and are religious. For example, the author of the famous expression 'Nothing in biology makes sense, except in the light of evolution', Dobzhansky, was a theist who saw the Bible and the Koran not as primers for natural science, but as the 'meaning of man and his relations to God'.

Evolution is also not 'just a theory or opinion', but a fact of life just like gravity. Especially in these polarising times, communication between different groups of people is so important on many different levels: within our own species, to stop prejudice, which are the basis of many unnecessary wars and fights, and for all other species with which we share this planet and without which we cannot live.

Finally, we are now in the midst of Earth's sixth mass extinction event. Why is the field of evolutionary biology so important for mitigating this crisis?

Climate change and human impact have major impacts on pretty much all life on the planet, on land and in water. Not only changes in temperature and rainfall patterns, but also light,

acoustic and chemical pollution, affect interactions between individuals within and between populations and species in all ecosystems. In turn, ecosystems are affected by species interactions and distributions.

For example, crops and grazing land now cover more than 30% of all land on Earth, while intensive agricultural practices and overgrazing are among the major causes of desertification. By analysing how genetic diversity within species affect various factors such as drought resistance or susceptibility to viruses, and how interactions between species affect food webs aboveground and belowground over time, evolutionary biologists can help policy and management plans to mitigate overexploitation and desertification.

Also, invasive plant, insect, fish, bird, parasite and predator species profoundly affect the ecology and evolution of all species with which these species interact. As invasive and native species have not co-evolved, premating barriers may not exist, so that unexpected hybridisations may occur. Evolutionary biologists can predict the likelihood and impact of such events.

Evolutionary insights are also crucial for conservation measures of endangered species, the success of which depends on population sizes and possible gene flow between populations, because these affect the genetic variation, the level of inbreeding and viability of species.

https://eseb.org/society/