

Curriculum Vitae

Last name, First name: van Oers, Kees

Gender: Male

Nationality: Netherlands/Dutch

Overall Scientific Expertise:

My expertise and my field of research lies in studying causes and consequences of individual differences in behaviour, specifically in birds. I make use of the triangle natural populations-captive populations-molecular lab, in which the individual is central. My main model species is the great tit, but I also work/ed on blue tits, oystercatchers, black grouse, barnacle goose and other bird species. In captivity I study the behavioural, physiological and genomic mechanisms underlying behaviour. Behavioural observations are central to this. These include standard measures for animal personality, but also extend to cognitive behaviours and learning. I link this to the consequences of behavioural variation in an ecological context in a long-term natural population.

Professional Experience

[Starting with your present occupation, list in reverse chronological order each activity in which you have been engaged. Please copy and paste more rows if needed.]

Years employed from – to	Title of position	Employer – name and location	Areas of professional specialisation [^]
2018-now	Special Professor	Wageningen University (WUR), The Netherlands	Animal Personality, Animal Behaviour, Animal Welfare
2012-now	Senior Scientist	Netherlands Institute of Ecology (NIOO-KNAW), Wageningen, The Netherlands	Animal behaviour, Genomics, Ecology, Evolution
2006-2012	Postdoctoral Fellow	Netherlands Institute of Ecology (NIOO-KNAW) , Wageningen, The Netherlands	Animal behaviour, Genomics, Ecology, Evolution
2004-2006	Postdoctoral Fellow	Max-Planck Institute for Ornithology, Seewiesen, Germany	Animal behaviour, Genomics, Ecology, Evolution
1998-2003	PhD candidate	Netherlands Institute of Ecology (NIOO-KNAW) , Wageningen, The Netherlands	Animal behaviour, genetics, Ecology

[^][For example: toxicology (alternative methods, carcinogenesis, endocrine, immunotoxicity, occupational, exposure assessment, genotoxicity, etc.), chemistry (atmospheric, medicinal, peptide, etc.), physics (biophysics, EMF radiation, noise, etc.), engineering (genetic, environmental, medical, etc.), biology (antimicrobial resistance, biophysics, biotechnology, etc.), medicine (allergies, neurology, etc.), epidemiology (clinical, genetic, cancer, etc.) environmental science (air quality, waste treatment, climate change, ecology, etc.), biostatistics, pharmacokinetics, medical technologies, nanoscience, etc...]

Specific expertise in the field of the call

I started working on *Parus major* in 1998 and have been working with them in captivity and in natural populations since then. We have facilities that can house over 500 passerine songbirds

and we typically hand rear about 200-300 birds each year. We have birds housed in individual cages (300 cages) and we have 116 aviaries for group and pair-housing. I am co-heading the animal facilities together with our head of department. I am responsible for managing hand rearing staff and facilities for great tits, blue tits, pied flycatchers and lately also house sparrows. I successfully bred birds in selection experiments and build up an extensive knowledge about their specificities in captivity. We regularly export birds that we breed to other research facilities in Europe in order to be used for scientific work. I also engaged in international collaborations for this reason. Where we mainly work on *Parus major*, we also have ample experience in hand rearing and housing juvenile and adult blue tits. These two species are similar, but still ask for different conditions.

My main research line deals with Animal Personality, strongly aligned with how individuals cope with changing situations/environments. I performed teaching in animal emotions and animal personality and I hold a chair in Animal Personality at the University of Wageningen.

I have set up local regulations regarding housing, since there are no general rules for Great tits and blue tits and I would warmly welcome if these rules are adopted widely. I have a broad network of fellow scientists and naturalists interested in great tits and work together with several research groups that are also housing great tits. Most of these groups received the knowledge and support from us and our dedicated animal care takers, that are specialized in passerines.

I am member of the local Animal Welfare Body since 2016, where we are responsible for assessing and checking the local animal experiments together with a dedicated Animal Experiments Officer from the KNAW. These are mainly experiments with passerines, but also with water fowl and other birds. I own an Art. 9 licence to conduct and plan experiments and I teach in the species-specific course of the official KNAW Art. 9 course on birds, genetics, housing and humane endpoints. I am therefore well-aware of the legislation and the gaps in our knowledge.

Educational Background

[Starting with the most recent, please provide the details of your post-secondary education and/or professional training (e.g. university or its equivalent, postgraduate, postdoctoral). Please copy and paste more rows if needed.]

Year	Degree awarded	Educational Institution – name and location	Areas of educational specialisation*
2003	PhD	Utrecht University – Utrecht, The	Behaviour genetics

		Netherlands	
1996	MSc	Groningen University – Groningen, The Netherlands	Animal Ecology
1994	BSc	Utrecht University – Utrecht, The Netherlands	Ecology

*[For example: chemistry (analytical, organic, etc.), physics (thermodynamics, nuclear, etc.), engineering (mechanical, electrical, chemical, civil, etc.), biology (microbiology, molecular, etc.), medicine (dermatology, oncology, etc.), environmental science, pharmacology, toxicology, etc....]

Memberships in Scientific Advisory Bodies/Committees/Panels (if any):

2021 – present Scientific Advisory Board – Institute for Ornithology, Germany
2018 – present Board member of the KNAW Dobberke Foundation
2012 – 2018 Board member of the Netherlands Society for Behavioural Biology

Memberships in Learned Societies (if any):

Memberships in Editorial Boards (if any):

Editor of Behavioural Ecology and Sociobiology (2018 – present)
Editor of Animal Behaviour (2013 - 2016)
Consulting Editor of Animal Behaviour (2009-2012)
Editor of Ardea (2009-2012)

List of Publications:

I have published 116 research papers in peer-reviewed journals and 8 book chapters.

<https://www.webofscience.com/wos/author/record/B-2562-2009>

Drent, P. J., van Oers, K., and van Noordwijk, A. J. (2003). Realized heritability of personalities in the great tit (*Parus major*). *Proceedings of the Royal Society of London Series B-Biological Sciences* 270, 45–51.

This paper describes one of our selection lines on animal personality. It also describes the still-existing methods on measuring personality and housing great tits.

Carere, C., and van Oers, K. (2004). Shy and bold great tits (*Parus major*): body temperature and breath rate in response to handling stress. *Physiology and Behavior* 82, 905–912.

In this study we measured physiological parameters of great tits in response to stress.

van Oers, K., De Jong, G., van Noordwijk, A. J., Kempenaers, B., and Drent, P. J. (2005). Contribution of genetics to the study of animal personalities: a review of case studies. *Behaviour* 142, 1185-1206.

This review paper describes the knowledge and hypotheses about the genetics of animal personality.

van Oers, K., and Carere, C. (2007). Long-term effects of repeated handling and bleeding in wild caught Great Tits *Parus major*. *Journal of Ornithology* 148, 185-190.

Here we describe the effects of repeated handling and catching of great tits in a captive aviary situation.

van Oers, K., and Mueller, J. C. (2010). Evolutionary genomics of animal personality. *Philosophical Transactions of the Royal Society of London, Series B* 365, 3991–4000.

With the rise of molecular methods for non-model organisms, we here describe the possible ways of using molecular genetics for the study of animal personality.

Sepers, B., van den Heuvel, K., Lindner, M., Viitaniemi, H., Husby, A., and van Oers, K. (2019). Avian ecological epigenetics: pitfalls and promises. *Journal of Ornithology* 160, 1183–1203.

This paper of one of my PhD students shows what the new hypotheses are for studying epigenetics in birds. What characteristics of birds are important when formulating questions.

Van Oers, K., Sepers, B., Sies, W., Gawehns, F., Verhoeven, K. J. F., and Laine, V. N. (2020). Epigenetics of animal personality: DNA methylation cannot explain the heritability of exploratory behavior in a songbird. *Integrative and Comparative Biology* 60, 1517–1530.

By making use of the lines selected for animal personality, crosses and F2 crosses, I here show that epigenetic variation is not co-selected during artificial selection in captivity.

Genzel, L., et al. (2020). How the COVID-19 pandemic highlights the necessity of animal research. *Current Biology*, S0960982220311842.

This views paper makes a point on the use of animals for experiments. It shows that during the COVID-19 pandemic, we relied heavily on animal experiments.

Lindner, M., Verhagen, I., Viitaniemi, H., Laine, V., Visser, M., Husby, A., et al. (2021). Temporal changes in DNA methylation and RNA expression in a small song bird: within- and between-tissue comparisons. *BMC GENOMICS* 22.

In this paper we describe the lines genomically selected for early and late laying dates. We investigate how we can use red blood cells, a tissue containing DNA in birds, as a biomarker for functional analyses in less available tissues. With ecological model species, such as great and blue tits, we rely on long-term information on individuals and try to avoid terminal sampling. Here we show the limits of this method.

Laine, V. N., Sepers, B., Lindner, M., Gawehns, F., Ruuskanen, S., and Oers, K. (2022). An ecologist's guide for studying DNA methylation variation in wild vertebrates. *Molecular Ecology Resources*, 1755–0998.13624.

In this recent review we describe the dos and don'ts of studying DNA methylation in wild vertebrates. It is used as a best-practice guide in the field.