

Professor Alex D. Greenwood, Ph.D.

Current Position: Head of Department of Wildlife Diseases (IZW), Professor of Wildlife Diseases, Freie Universität Berlin

I am an evolutionary virologist working on viruses of wild mammals and specializing in retroviruses and herpesviruses. I have headed the Department of Wildlife Diseases at the IZW for 12 years combining biological and veterinary medical expertise to address viral, bacterial, parasite and immunological phenomenon affecting wild mammals. I also have worked for decades on developing and implementing novel high throughput approaches to viral discovery including from ancient and environmental DNA.

Current address: Head of Department of Wildlife Diseases, Leibniz Institute for Zoo and Wildlife Research (IZW), Professor of Wildlife Diseases, Department of Veterinary Medicine, Freie Universität Berlin. IZW: Alfred-Kowalke-Str. 17, 10315 Berlin; Germany, Phone: +4930 5168 511, Fax: +4930 5126 104,

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Employment

2009 – present: Professor at the Freie Universität Berlin
2009 – present: Head of Department of Wildlife Diseases at the IZW
2006 – 2009: Assistant Professor of Biological Sciences, Old Dominion University, Norfolk Virginia, USA
2001 – 2006: Postdoc Helmholtzzentrum München, Prof. Dr. Christine Leib-Mösch, Retrovirology
1998 – 2001: Postdoc American Museum of Natural History, New York, Dr. Ross MacPhee, ancient DNA and evolution
1996 – 1998: National Science Foundation/Alfred P. Sloan Foundation Postdoctoral Fellowship in Molecular Evolution, Zoological Institute of Munich, Germany, Prof. Dr. Svante Pääbo, ancient DNA
1990 – 1996: Doctoral research University of Michigan, Ann Arbor, Michigan

Higher Education

1996 PhD, Human Genetics, University of Michigan, Ann Arbor, Michigan
1990 BA, Biology, Cornell University, Ithaca, New York

Project fund raising

Since 1996 ca. \$3 million USD from various sources including the National Science Foundation, the National Institutes of Health, Morris Animal Foundation, and Deutsche Forschungsgemeinschaft

Patents and licences, contacts to industry

Patent application “Hybridization Capture and Capture of Flanks (CapFlank) to enrich pathogens” DE 10 2014 106 483.6 (2014)

Teaching and education, outreach

Teaching of retrovirology, high throughput diagnostic and analytical methods applied to pathogen research and evolutionary virology, teaching of emerging infectious diseases

Professional roles and services to the scientific community

Associate Editor for BMC Research Notes, Associate Editor for Mitochondrial DNA; Associate Editor for Scientific Reports, Member, Dahlem Research School, Freie Universität

Berlin, Associate Member, Centre of Infection Biology and Immunity, Polar Bear European Endangered Species Programme (EEP) Advisor, until 2019, Co-organizer of annual International Conference on Diseases of Zoo and Wild Animals with ca 300 participants, Referee for many journals: including *PLoS One*, *Virus Research*, *Journal of Virological Methods*, *Molecular Biology and Evolution*, *Current Biology*, *PNAS* etc.

Awards, honors

Since 2001 Research Associate, American Museum of Natural History, Vertebrate Zoology, New York, New York, USA

10 selected publications (full list <https://www.researchgate.net/profile/Alex-Greenwood-2/publications>)

1. Ávila-Arcos MC*, Ho SYW*, Ishida Y*, Nikolaidis N*, Tsangaras K, Hönig K, Medina R, Rasmussen M, Fordyce SL, Calvignac-Spencer S, Willerslev E, Gilbert MTP, Helgen KM, Roca AL§, **Greenwood AD**§ (2012) 120 years of koala retrovirus evolution determined from museum skins. *Mol Biol Evol* 30(2):299-304. * equal contributors, § corresponding authors
2. **Greenwood AD***, Tsangaras K*, Ho SY, Szentiks CA, Nikolin VM, Ma G, Damiani A, East ML, Lawrenz A, Hofer H, Osterrieder N. (2012) A Potentially Fatal Mix of Herpes in Zoos. *Curr Biol*. 22(18):1727-31 *Equal contributors
3. Escalera-Zamudio M, Zepeda LM, Heeger F, Loza-Rubio E, Rojas-Anaya E, Méndez-Ojeda M, Taboada B, Mazzoni CJ, Arias CF, **Greenwood AD** (2015) A novel endogenous betaretrovirus in the common vampire bat (*Desmodus rotundus*) suggests multiple independent infection and cross-species transmission events. *J Virol*. 89(9):5180-4
4. Escalera-Zamudio M, Zepeda-Mendoza ML, Loza-Rubio E, Rojas-Anaya E, Méndez-Ojeda ML, Arias CF, **Greenwood AD** (2015) The evolution of bat nucleic acid sensing Toll-1 like receptors. *Mol Ecol*. 24(23):5899-909.
5. Alfano N, Michaux J, Morand S, Aplin K, Tsangaras K, Löber U, Fabre PH, Fitriana Y, Semiadi G, Ishida Y, Helgen KM, Roca AL, Eiden MV, **Greenwood AD**. (2016) An endogenous gibbon ape leukemia virus (GALV) identified in a rodent (*Melomys burtoni subsp.*) from Wallacea (Indonesia). *J Virol*. 90(18):8169-80
6. Escalera-Zamudio M, Rojas-Anaya E, Kolokotronis SO, Taboada B, Méndez-Ojedad ML, Loza-Rubio E, Arias CF, Osterrieder N, **Greenwood AD** (2016). Bats, primates, and the evolutionary origins and diversification of mammalian gammaherpesviruses. *mBio*. 7(6). pii: e01425-16
7. **Greenwood AD**, Ishida Y, O'Brien SP, Roca AL, Eiden MV (2017) Transmission, evolution and endogenization: lessons learned from recent mammalian retroviral invasions. *Microbiol. Mol. Biol. Rev.* 82(1). pii: e00044-17
8. Löber U, Hobbs M, Dayaram A, Tsangaras K, Jones K, Alquezar-Planas DE, Ishida Y, Meers J, Mayer J, Quedenau C, Chen W, Johnson RN, Timms P, Young P, Roca AL*, **Greenwood AD*** (2018) Degradation and remobilization of endogenous retroviruses by recombination during the earliest stages of a germline invasion. *Proc Natl Acad Sci*. 115(34):8609-8614 * corresponding authors
9. Soilemetzidou ES, De Bruin E, Franz M, Aschenborn OHK, Rimmelzwaan GF, van Beek R, Koopmans M, **Greenwood AD**, Cziráj GÁ. Diet May Drive Influenza A Virus Exposure in African Mammals. *J Infect Dis*. 2020 Jan 2;221(2):175-182.
10. McEwen GK, Alquezar-Planas DE, Dayaram A, Gillett A, Tarlinton R, Mongan N, Chappell KJ, Henning J, Tan M, Timms P, Young PR, Roca AL, **Greenwood AD** (2021) Retroviral integrations contribute to elevated host cancer rates during germline invasion. *Nat Comm* 12, 1316.