

S. R. B. KING

Website: <https://BreninBehavior.com/>

Education

2002	Ph.D.	Behavioral Ecology - Queen Mary, University of London
1996	B.Sc. (Hons.)	Zoology and Ecology - Queen Mary & Westfield College, University of London

Employment

Oct 2022 – Present	Owner – Brenin Behavior LLC. Horse and dog trainer and behavior consultant.
Aug 2023 – Present	Adjunct Faculty – Department of Fish, Wildlife, and Conservation Biology, Colorado State University
Oct 2020 – Present	Joint Faculty – Graduate Degree Program in Ecology (GDPE), Colorado State University
Aug 2013 – Present	Research Scientist II – Natural Resource Ecology Laboratory (NREL), Colorado State University, in collaboration with USGS Fort Collins Science Center Leading essential research to provide science that informs management of feral horses and donkeys in the western United States, and that advances our knowledge of their behavior and ecology.
May – Aug 2013	Research Associate – Department of Fish, Wildlife, And Conservation Biology, Colorado State University
May 2010 – May 2013	Postdoctoral Research Associate – University of Colorado at Boulder Research on elevational distribution and abundance of small mammals and their food resources in the mountains of Colorado to examine the effect of biodiversity parameters and climate change.
Nov 2006 – May 2010	Chargée de Mission/Project Manager – Association pour le cheval de Przewalski: TAKH, France. Implemented and directed the community development and rangeland management aspects of an evidence-based integrated conservation project in western Mongolia, involving working closely with partners (WWF-Mongolia and Khar Us Nuur National Park) and local stakeholders. Conducted research on Przewalski's horse ecology and behavior.
Jun 2005 – Sep 2006	Project Manager – Zoological Society of London's Steppe Forward Programme, Mongolia. Directed a Darwin Initiative (UK DEFRA) funded project and built on it by gaining further funding and developing new projects. Organized and taught on ecological and IUCN Red List workshops for environmental professionals and stakeholders; organized and taught ecological field courses for Mongolian undergraduates in remote parts of Mongolia.
Jan 2003 – Jun 2005	Wildlife Biologist, Senior – Mount Graham Red Squirrel Monitoring Project, University of Arizona. Designed and headed research projects examining behavioral ecology of an endangered squirrel.

Honors and awards

2023	Awarded the B.F. Skinner Scholarship for the Karen Pryor Academy
2023-present	Member of the Animal Human Policy Center board, Colorado State University
2022-present	Member of the IUCN/SSC Conservation Translocation Specialist group
2020-present	Member of the Free Roaming Equids and Ecosystem Sustainability (FREES) Network steering committee
2019	IUCN/SSC Equid Specialist Group awarded The SSC Chair's Citation of Excellence
2017-present	Co-chair of the IUCN/SSC Equid Specialist Group
2017- present	Plains zebra coordinator - IUCN
2016-2017	International Presidential Fellow - Colorado State University
2013-present	Coordinator of the Equid Red List Authority – IUCN
2005-2008	Conservation Fellow - Zoological Society of London
2003	Outstanding Team Award - College of Agriculture and Life Sciences, University of Arizona
1999-present	Member of the IUCN/SSC Equid Specialist Group

Peer-reviewed publications

1. Schoenecker, K., **King, S.R.B.**, Hennig, J.D., Scasta, J.D., & Beck, J. L. 'Effects of telemetry collars on two free-roaming feral equid species'. *PLOS One*. In review.
2. Esmaeili, S., Schoenecker, K. & **King, S.R.B.** 'Resource availability and heterogeneity affect space use and resource selection of a feral ungulate'. *Ecological Applications*. In review.
3. Esmaeili, S., Mahmoud-Reza, H., Kaczensky, P., Schoenecker, K., **King, S.R.B.**, Shahriari, B., Walzer, C., Goheen, J. 'Rainfall reduces the potential for competitive suppression of a globally endangered ungulate by livestock'. *Ecological Applications*. In review.
4. Pacific, M., Cristiano, A., Lumbierres, M. ... **King, S.R.B.** ... Wiesel, L. 2023. 'Drivers of habitat availability for terrestrial mammals'. *Global Change Biology*. In press.
5. Esmaeili, S., Schoenecker, K. & **King, S.R.B.** 2023. 'Browsers or grazers? New insights into feral burro diet using a non-invasive sampling and plant DNA metabarcoding approach'. *Animals*. 13: 2683.
6. **King, S.R.B.**, Cole, M., Barton, C., & Schoenecker, K. 2023 'Proximate factors affecting mortality and maternal abandonment of young free-roaming feral horse foals'. *Journal of Veterinary Behavior*. Online early.
7. Schoenecker, K., Esmaeili, S. & **King, S.R.B.** 2023. 'Seasonal resource selection and movement ecology of free-ranging horses in the Western USA'. *Journal of Wildlife Management*. 87: e22341.
8. Pluháček, J., Tučková, V. & **King, S.R.B.** 2022. 'Not just for males: flehmen as a tool for detection of reproductive status and individual recognition across sexes in four African equid species'. *Behavioural Processes*. 203: 104773.
9. Schoenecker, K.A., **King, S.R.B.** and Cole, M.J. 2022. GPS locations of feral horses in Utah, USA, from 2016-2020. *U.S. Geological Survey data release*. <https://doi.org/10.5066/P90NHXZL>
10. Pluháček, J., Tučková, V., Šárová, R. & **King, S.R.B.** 2022. 'Why wait to mark? Possible reasons behind latency from olfactory exploration to overmarking in four African equid species'. *Animal Cognition*. Online early.
11. **King, S.R.B.** & Schoenecker, K. 2022. 'Application of tail transmitters for tracking feral horses as an alternative to radio collars'. *Wildlife Society Bulletin*. 46(4): e1338.
12. Bechert, U. S., Turner, J. W., Baker, D. L., Eckery, D. C., Bruemmer, J., Lyman, C. C., Prado, T, **King, S.R.B.**, & Fraker, M. 2022. 'Fertility control options for management of free-roaming horse populations'. *Human-Wildlife Interactions*. 16: 179-216.
13. **King, S.R.B.**, Schoenecker, K., & Cole, M. 2022. 'Effect of adult male sterilization on the behavior and social associations of a feral polygynous ungulate: the horse'. *Applied Animal Behaviour Science*. 249: 105598.
14. Esmaeili, S., Jesmer, B. R., Albeke, S. E., Aikens, E. O., **King, S.R.B.**, et al. 2021. 'Body size and digestive system shape resource selection by ungulates: a cross-taxa test of the Forage Maturation Hypothesis'. *Ecology Letters*. 24(10):2178-2191.
15. Schoenecker, K., **King, S.R.B.**, & Messmer, T.A. 2021. 'The wildlife profession's duty in achieving science-based sustainable management of free-roaming equids'. *Journal of Wildlife Management*. 85(6): 1057-1061.
16. Schoenecker, K. A., Oyler-McCance, S., Ekernas, L., **King, S.R.B.** 2021. 'Using fecal DNA and closed-capture models to estimate feral horse population size'. *Journal of Wildlife Management*. 85(6): 1150-1161
17. McCain, C., **King, S.R.B.** & Szewczyk, T. 2021. 'Unusually large upward shifts in cold-adapted, montane mammals as temperature warms'. *Ecology*. 102(4): e03300
18. **King, S.R.B.**, Schoenecker, K. A., Fike, J., & Oyler-McCance, S. 2021. 'Feral horse space use and genetic characteristics from fecal DNA'. *Journal of Wildlife Management*. 85(6): 1074-1083
19. Bolam, F., Mair, L., Angelico, M., Brooks, T., Burgman, M., Hermes, C., Hoffmann, M., ... **King, S.R.B.**, et al. 2020. 'How many bird and mammal extinctions has recent conservation action prevented?'. *Conservation Letters*. e12762: 1-11.
20. Hennig, J., Scasta, J.D., Beck, J., Schoenecker, K., & **King, S.R.B.** 2020. 'Systematic Review of Equids and Telemetry Collars: Implications for Deployment and Reporting'. *Wildlife Research*. 47: 361-371.
21. Schoenecker, K., **King, S.R.B.** & Collins, G. 2020. 'Evaluation of the impacts of radio-marking devices on feral horses and burros in a captive setting'. *Human-Wildlife Interactions*. 14(1):73-86.
22. Pluháček, J., Tučková, V., **King, S.R.B.**, & Šárová, R. 2020. 'Effect of social organisation on interspecific differences in overmarking behaviour of foals in African equids'. *Animal Cognition*. 23: 131-140
23. Pluháček, J., Tučková, V. & **King, S.R.B.** 2019. 'Overmarking behaviour of zebra males: no scent masking, but a group cohesion function'. *Behavioural Ecology & Sociobiology*. 73: 136-147.
24. **King, S.R.B.** & Schoenecker, K. 2019. 'Comparison of methods to examine diet of feral horses from non-invasively collected fecal samples'. *Rangeland Ecology and Management*. 72: 661-666.
25. **King, S.R.B.**, Schoenecker, K. & Manier, D. 2019. 'Potential spread of cheatgrass (*Bromus tectorum*) and other invasive species by feral horses (*Equus ferus caballus*) in western Colorado'. *Rangeland Ecology and Management*. 72: 706-710.
26. **King, S.R.B.** & Gurnell, J. 2019. 'Associative behaviour in Przewalski's horses reintroduced into Mongolia'. *Nature Conservation Research*. 4(Suppl.2): 1-9.

27. Pluháček, J., Tučková, V., **King, S.R.B.**, & Šárová, R. 2019. 'Test of four hypotheses to explain the function of overmarking in foals of four equid species'. *Animal Cognition*. 22: 231-241.
28. Gosling, M., Muntifering, J., Kolberg, H., Uiseb, K., & **King, S.R.B.** 2019. '*Equus zebra*'. *Equus zebra. The IUCN Red List of Threatened Species* 2010. e.T7960A45171906.
29. Gosling, M., Muntifering, J., Kolberg, H., Uiseb, K., & **King, S.R.B.** 2019. '*Equus zebra ssp. hartmannae*'. *The IUCN Red List of Threatened Species* 2019. e.T7958A45171819.
30. McCain, C., **King, S.R.B.**, Szewczyk, T., & Beck, J. 2018. 'Small mammal species richness is directly linked to regional productivity, but decoupled from food resources, abundance, or habitat complexity'. *Journal of Biogeography*. 45:2533-2545.
31. McGowan, P., Mair, L., Symes, A., Westrip, J., Wheatley, H., Brook, S., Burton, J., **King, S.**, McShea, W., Moehlman, P., Smith, A., Wheeler, J., & Butchart, S. 2018 'Tracking trends in the extinction risk of wild relatives of domesticated species to assess progress against global biodiversity targets'. *Conservation Letters*. e12588.
32. Tučková, V., R. Sarova, J. Bartošová, **King, S.R.B.** & Pluháček, J. 2018. Overmarking by adult females in four equid species: social bonds and group cohesion. *Journal of Zoology*. 306:180-188.
33. **King, S.R.B.**, Schoenecker, K., Fike, J., & Oyler-McCance, S. 2018. 'Long-term persistence of horse fecal DNA in the environment makes equids particularly good candidates for non-invasive sampling'. *Ecology and Evolution*. 8: 4053-4064.
34. Crooks, K.R., Burdett, C.L., Theobald, D.M., **King, S.R.B.**, Di Marco, M., Rondinini, C., & Boitani, L. 2017. 'Quantification of habitat fragmentation reveals extinction risk in terrestrial mammals'. *Proceedings of the National Academy of Sciences*. 114: 7635-7640.
35. Rubenstein, D., Low Mackey, B., Davidson, Z.D., & **King, S.R.B.** 2016. '*Equus grevyi*'. *The IUCN Red List of Threatened Species* 2016: e.T7950A89624491.
36. **King, S.R.B.**, & Moehlman, P.D. 2016. '*Equus quagga*'. *The IUCN Red List of Threatened Species* 2016: e.T41013A45172424.
37. **King, S.R.B.**, Boyd, L., Zimmermann, W. & Kendall, B.E. 2015. '*Equus ferus*'. *The IUCN Red List of Threatened Species* 2015: e.T41763A97204950.
38. **King, S.R.B.** & McCain, C.M. 2015. 'Robust discrimination of *Reithrodontomys megalotis* and *R. montanus* (Mammalia: Rodentia) from Colorado, using cranial morphology and external characteristics within age classes'. *Proceedings of the Biological Society of Washington*. 128: 1-10
39. McCain, C.M. & **King, S.R.B.** 2014. 'Body size and activity times mediate mammalian responses to climate change'. *Global Change Biology*. 20:1760-1769.
40. Olléová, M., Pluháček, J. & **King, S.R.B.** 2012. 'Effect of social system on allosuckling and adoption in zebras'. *Journal of Zoology*. 288: 127-134.
41. Boyd, L. & **King, S.R.B.** 2011. '*Equus ferus*'. In: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2.
42. **King, S.R.B.** & Gurnell, J. 2010. 'Effects of fly disturbance on the behaviour of a population of reintroduced Przewalski horses (*Equus ferus przewalskii*) in Mongolia'. *Applied Animal Behaviour Science*. 125: 22-29.
43. Bourjade, M., Tatin, L., **King, S.R.B.** & Feh, C. 2009. 'Early reproductive success, preceding bachelor ranks and their behavioral correlates in young Przewalski's stallions'. *Ethology, Ecology & Evolution*. 21: 1-14.
44. Tatin, L., **King, S.R.B.**, Munkhtuya, B., Hewison, A.J.M. & Feh, C. 2009. 'Demography of a socially natural herd of Przewalski's horses: an example of a small, closed population'. *Journal of Zoology*. 277: 134-140.
45. Boyd, L., Zimmermann, W. & **King, S.R.B.** 2008. *Equus ferus ssp. przewalskii*. In: *IUCN 2008. 2008 IUCN Red List of Threatened Species*.
46. **King, S.R.B.** 2007. 'Asiatic wild asses in the literature: what do we need to know now?'. In: Stubbe, A., Kaczensky, P., Wesche, K., Samija, R. & Stubbe, M. (eds). *Exploration into the Biological Resources of Mongolia*, 10. pp: 347-357. Martin-Luther-Universität Halle Wittenberg, Halle (Saale), Germany.
47. **King, S.R.B.** & Gurnell, J. 2007. 'Scent-marking behaviour of stallions: an assessment of function in a reintroduced population of Przewalski horses (*Equus ferus przewalskii*)'. *Journal of Zoology*. 272: 30-36.
48. Koprowski, J.L., **King, S.R.B.** & Merrick, M. 2007. 'Expanded home ranges in a peripheral population: space use by endangered Mt. Graham red squirrels'. *Endangered Species Research*. 3: 105-110.
49. Clark, E.L., Ocock, J.F., **King, S.R.B.** & Baillie, J.E.M. 2006. 'Proceedings of the Mongolian Biodiversity Databank Workshop: Assessing the Conservation Status of Mongolian Mammals and Fishes. I - Results and Outputs of the Workshop'. *Mongolian Journal of Biological Sciences*. 3: 3-15.
50. Clark, E.L., Ocock, J.F., **King, S.R.B.** & Baillie, J.E.M. 2006. 'Proceedings of the Mongolian Biodiversity Databank Workshop: Assessing the Conservation Status of Mongolian Mammals and Fishes. II – Mongolian Mammals: Assessment Results and Threats'. *Mongolian Journal of Biological Sciences*. 3: 17-27.
51. Ocock, J.F., Clark, E.L., **King, S.R.B.** & Baillie, J.E.M. 2006. 'Proceedings of the Mongolian Biodiversity Databank Workshop: Assessing the Conservation Status of Mongolian Mammals and Fishes. III – Mongolian Fishes: Assessment Results and Threats'. *Mongolian Journal of Biological Sciences*. 3: 29-36.

52. Isaac, J.L., Jamsranjav, J., Simpson, L. & **King, S.R.B.** 2006. Small mammals of the Mongolian mountain steppe region near Erdensant: insights from live-trapping and bird pellet remains. *Mongolian Journal of Biological Sciences*. 3: 43-49.
53. **King, S.R.B.** 2006. 'Extinct in the Wild to Endangered: the history of Przewalski's horse (*Equus ferus przewalskii*) and its future conservation'. *Mongolian Journal of Biological Sciences*. 3: 37-41.
54. **King, S.R.B.** & Gurnell, J. 2005. 'Habitat use and spatial dynamics of takhi introduced to Hustai National Park, Mongolia'. *Biological Conservation*. 124: 277-290.
55. **King, S.R.B.** 2002. 'Home range and habitat use of free-ranging Przewalski horses at Hustai National Park, Mongolia.' *Applied Animal Behaviour Science*. 78: 103-113

Peer-reviewed books and book chapters

56. **King, S.R.B.** & Moehlman, P.D. 2017. *Mountain zebra* (*Equus zebra*). In: Back From the Brink. CEMEX Conservation Book Series.
57. **King, S.R.B.**, Asa, C., Pluháček, J., Houpt, K. & Ransom, J. 2016. 'The behavior of horses, zebras, and asses'. Chapter 3 In: Ransom, J. & Kaczensky, P. (eds). *Wild Equids: Ecology, Management, and Conservation*. Johns Hopkins University Press.
58. Schoenecker, K.A, **King, S.R.B.**, Nordquist, M., Dejid, N., & Cao, Q. 2016. 'Habitat and diet of equids'. Chapter 4 In: Ransom, J. & Kaczensky, P. (eds). *Wild Equids: Ecology, Management, and Conservation*. Johns Hopkins University Press.
59. Moehlman, P., **King, S.R.B.**, & Kebede, F. 2016. 'Conservation of threatened wild equids'. Chapter 12 In: Ransom, J. & Kaczensky, P. (eds). *Wild Equids: Ecology, Management, and Conservation*. Johns Hopkins University Press.
60. Hrabar, H., Birss, C., Peinke, D., **King, S.**, Novellie, P., Kerley, G. & Child, M. 2016. A Conservation Assessment of *Equus zebra zebra*. In: M.F. Child, L. Roxburgh, E. Do Linh San, D. Raimondo, and H. Davies-Mostert (eds), *The Red List of Mammals of South Africa, Swaziland and Lesotho*. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
61. Novellie, P., **King, S.**, Munifering, J., Uiseb, K., & Child, M.F. 2016. A Conservation Assessment of *Equus zebra hartmannae*. In: M.F. Child, L. Roxburgh, E. Do Linh San, D. Raimondo, and H. Davies-Mostert (eds), *The Red List of Mammals of South Africa, Swaziland and Lesotho*. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.
62. Batsaikhan, N., Samiya, R., Shar, S. & **King, S.R.B.** 2014. *A Field Guide to the Mammals of Mongolia*. Second Edition. 307pp. Zoological Society of London, London.
63. **King, S.R.B.** 2013 'Przewalski's horses and red wolves: importance of behavioral research for species brought back from the brink of extinction'. Pp:153-158 in: Bekoff, M. (ed). *Ignoring Nature No More: The Case for Compassionate Conservation*. University of Chicago Press, Chicago, USA.
64. Joly, F., Samdanjigmed, T., Saidi, S., **King, S.R.B.** & Feh, C. 2011. 'Forage resource utilisation in Mongolia. Two concepts frequently applied in range ecology'. Pp 57-70 in: Kammili, T., Hubert, B., & Tourrand, J-F. (eds.). *A paradigm shift in livestock management: from resource sufficiency to functional integrity*. Editions QUAE.
65. Batsaikhan, N., Samiya, R., Shar, S. & **King, S.R.B.** 2010. *A Field Guide to the Mammals of Mongolia*. 307pp. Zoological Society of London, London.
66. **King, S.R.B.** & Koprowski, J.L. 2009. 'Human and non-human disturbance of Mt. Graham red squirrels'. In: Sanderson, H.R. & Koprowski, J.L. (eds). *The Last Refuge of the Mt. Graham Red Squirrel. Ecology of Endangerment*. University of Arizona Press, Tucson, USA.
67. Clark, E.L., Munkhbat, J., Dulamtseren, S., Baillie, J.E.M., Batsaikhan, N., **King, S.R.B.**, Samiya, R. & Stubbe, M. (compilers and editors). 2006. *Summary Conservation Action Plans for Mongolian Mammals*. Regional Red List Series Vol. 2. Zoological Society of London, London.
68. **King, S.R.B.** & Boyd, L. 2006. 'Behavioural ecology of the takhi'. In: Wit, P. & Bouman, I. *The tale of the Przewalski's horse. Coming home to Mongolia*. pp: 124-127. KNNV Publishing, Utrecht, Netherlands.

Other publications

1. Schoenecker, K.A., **King, S.R.B.**, & Ekernas. 2019. 'Emerging tools to control feral horse populations in the western USA'. *Proceedings of the 18th Wildlife Damage Management Conference*. J.B. Armstrong, G.R. Gallagher, Eds. Pp 42-43.
2. Moehlman, P. D. & **King, S.R.B.** IUCN SSC Equid Specialist Group reports. IUCN/SSC. Gland, Switzerland.
3. Oddie, K. & Gombobaatar. 2009. *Maral's adventures*. **King, S.R.B.** & Jargal, J. (eds). Zoological Society of London, London.
4. **King, S.R.B.** Darwin Initiative reports for the UK Department of the Environment, Farming and Rural Affairs (DEFRA). Available at: <http://darwin.defra.gov.uk/project/12029/>
5. Hack, M.A. & **King, S.R.B.** 2005. *Equid Bibliography*. IUCN/SSC Equid Specialist Group, IUCN (The World Conservation Union), Gland, Switzerland. Available at: <http://data.iucn.org/themes/ssc/sgs/equid/Pub.html>
6. **King, S.R.B.** November 2002 'Back to the Hustai'. *BBC Wildlife Magazine*. Photos by Frans Lanting.
7. **King, S.R.B.** 1993. 'Iberian wolves – Grupo Lobo'. *Mammalaction*. 62:2

Editor/Peer reviewer

- **Editor** for Mongolian Journal of Biological Sciences (2005-present)
- **Review editor** for Frontiers in Ethology (2022-present)
- **Associate editor** of Journal of Wildlife Management special issue on feral horses and burros (2020-2021)
- **Peer reviewer** for Acta Ethologica, African Journal of Ecology, Animal Behavior, Animal Cognition, Animals, Applied Animal Behavior Science, Axios Review, Behavioural Processes, Biological Conservation, Conservation Biology, Current Zoology, Diversity and Distributions, Ecoscience, Frontiers in Ecology and Evolution, Global Ecology and Conservation, Human-Wildlife Interactions, Journal of Animal Ecology, Journal of Arid Environments, Journal of Equine Veterinary Science, Journal of Ethology, Journal of Mammalogy, Journal of Species Research, Journal of Veterinary Behavior, Journal of Wildlife Management, Journal of Zoology, Korean Journal of Zoology, Mongolian Journal of Biological Sciences, Open Biology Journal, Oryx, Rangeland Ecology and Management, Scientific Reports, Sensors, Western North American Naturalist, Wildlife Society Bulletin, Ranger Rick, and IUCN and USGS publications.
- **Grant application reviewer** for National Geographic Society; US-Israel Binational Science Foundation; Animal Behavior Society student and developing nation research grants; Conservation Leadership Program; Austrian Science Fund.
- Member of the Morris Animal Foundation's Equine Behavior **Scientific Advisory Board** (2022-present).
- **Employee peer reviewer** for Smithsonian.
- **Abstract review** for North American Conference of Conservation Biology (NACCB), Denver, CO 2020.

Scientific conferences and meetings

- 2023 **Invited** to the Convention of Migratory Species of Wild Animals First Range State Meeting for the Asiatic Wild Ass (Khulan), Vilm, Germany
- 2023 Session chair of 'Management and Conservation of Wild and Feral Equids', Pathways Conference, Fort Collins, CO, USA (with K. Schoenecker)
- 2023 **Organizer** of the 'Equid Taxonomy Workshop', Edinburgh, Scotland (with P. Moehlman)
- 2019 **Organizer** of the '2nd International Wild Equid Conference', Prague, Czechia (with K. Schoenecker, J. Pluháček, and P. Moehlman)
- 2017 **Invited** to the Convention of Migratory Species of Wild Animals Road Map for the Conservation of the African Wild Ass *Equus africanus*, Bonn, Germany
- 2008 **Organizer** of the international 'Workshop to discuss the future of the takhi in Mongolia' (with C. Feh).

Oral presentations

- 2023 'Population Dynamics and Viability of Onager (*Equus hemionus onager*) on the Arid Plateau of Iran' 13th International Mammalogical Congress, Anchorage, AK, USA (presented by S. Esmaeili)
- 2023 'Proximate factors affecting mortality or abandonment of feral horse foals' Animal Behavior Society conference, Portland, OR, USA (with K. Schoenecker, M. Cole, and C. Barton)
- 2023 'Effects of domestication increase management challenges' Pathways Conference, Fort Collins, CO, USA (presented by K. Schoenecker)
- 2023 'Cost of coexistence with a globally endangered ungulate in a multi-use landscape' Pathways Conference, Fort Collins, CO, USA (presented by S. Esmaeili)
- 2023 'Different impacts of horses when wild and wilder' Pathways Conference, Fort Collins, CO, USA (with K. Schoenecker)
- 2023 'Effects of domestication increase management challenges' Wildlife Damage Management Conference, Logan, UT, USA (presented by K. Schoenecker)
- 2022 'Effect of adult male sterilization on the behavior and social associations of free-roaming feral horses' The Wildlife Society, Spokane, WA, USA (with K. Schoenecker and M. Cole). **Invited speaker**
- 2022 'Proximate factors affecting mortality or abandonment of feral horse foals' The Wildlife Society, Spokane, WA, USA (with K. Schoenecker, M. Cole, and C. Barton)
- 2022 'Effects of radio collars on free-roaming feral equids' horses' The Wildlife Society, Spokane, WA, USA (with K. Schoenecker, J. Hennig, J.D. Scasta, and J. Beck)
- 2022 'Feral equids: ecology of a native and invasive species' USGS Fort Collins Science Center Symposium, Fort Collins, CO, USA.
- 2022 'Feral equids: ecology of a native and invasive species' 25th Anniversary of the Pentzueg Reserve Conference, Hortobágy, Hungary. **Invited speaker**
- 2022 'Unusually large upward shifts in cold-adapted, montane mammals as temperature warms' American Society of Mammalogists, Tucson, AZ, USA (presented by C. McCain)

- 2022 'Resource availability and variability affect space use and resource selection of feral burros' *American Society of Mammalogists*, Tucson, AZ, USA (presented by S. Esmaeili)
- 2022 'The role of fertility control in addressing the wild horse and burro management crisis: Current and emerging methods' *Pathways 2022: Human Dimensions of Wildlife Conference*, Bremerton, WA, USA (part of a panel in a special symposium on wild horses and burros)
- 2022 'Feral horse and burro behavior in relation to management' *USGS Fort Collins Science Center Symposium*, virtual.
- 2021 'Feral horse space use and genetic characteristics from fecal DNA' *The Wildlife Society*, virtual conference (with K. Schoenecker, J. Fike, and S. Oyler-McCance)
- 2021 'The Wildlife Profession's Duty in Achieving Science-Based Sustainable Management of Free-Roaming Equids' *The Wildlife Society*, virtual conference (presented by K. Schoenecker)
- 2021 'Spatial Ecology, Seasonal Resource Selection and Movement Ecology of Free-Ranging Horses in the Western USA' *The Wildlife Society*, virtual conference (presented by K. Schoenecker)
- 2021 'Habitat Productivity and Predictability Drive Resource Selection by Feral Burros' *The Wildlife Society*, virtual conference (presented by S. Esmaeili)
- 2021 'Recent changes in area of habitat to identify priority areas for conservation interventions in mammals' *International Congress on Conservation Biology*, virtual conference (presented by M. Pacifici)
- 2021 'A novel method for tracking long-haired mammals as an alternative to radio collars' *7th International Bio-logging Science Symposium*, virtual conference (with K. Schoenecker)
- 2021 'Effect of adult male sterilization on the behavior and social associations of a feral polygynous ungulate' *Animal Behavior Society*, virtual conference (with K. Schoenecker and M. Cole)
- 2021 'Horses and burros: they really are different' *Bureau of Land Management webinar* (with K. Schoenecker).
- 2021 'Effect of gelding on stallion behavior and population foaling rate' *Bureau of Land Management webinar* (with K. Schoenecker and M. Cole).
- 2020 'Effect of sterilizing adult males on feral horse social and reproductive behavior' *Free Roaming Equids and Ecosystem Sustainability Summit*, Cody, WY, USA. (with K. Schoenecker and M. Cole).
- 2020 'Donkey behavior in a horse's world' *International Donkey Symposium*, virtual conference. (with K. Schoenecker)
- 2020 'Detection of space use by an elusive species using non-invasive fecal sampling' *North American Congress on Conservation Biology*, virtual conference. (with K. Schoenecker et al.)
- 2020 "Horses and donkeys: different species, different social systems, different behavior?" *Animal Behavior Society*, virtual conference. (with K. Schoenecker).
- 2020 'Horses and donkeys: different species, different social systems, different management?' *13th International Primatology and Wildlife Science Conference*, Kyoto, Japan. **Plenary speaker** [Conference cancelled due to coronavirus outbreak.]
- 2020 'fDNA and microhistology to evaluate feral horse diets'. *Society of Rangeland Management Conference*, Denver, CO, USA (with K. Schoenecker). **Invited speaker**
- 2019 'Behavioural ecology of feral horses and burros in the American west'. Institute of Animal Science, Prague, Czechia (with K. Schoenecker). **Invited speaker**
- 2019 'Social system shapes differences in social behaviors of equids'. *2nd International Wild Equid Conference*, Prague, Czechia (with K. Schoenecker)
- 2019 'Overmarking by adult females in four equid species serves to strengthen the social bonds and to support group cohesion' *2nd International Wild Equid Conference*, Prague, Czechia (presented by J. Pluháček)
- 2019 'Effect of availability and temporal variability of resources on the distribution and movement of feral burro (*Equus asinus*) populations' *2nd International Wild Equid Conference*, Prague, Czechia (presented by K. Schoenecker)
- 2019 'Does the forage maturation hypothesis predict seasonal movements of equids?' *2nd International Wild Equid Conference*, Prague, Czechia (by S. Esmaeili)
- 2019 'Safety and application of telemetry collars on wild and free-roaming equids: A global systematic review' *2nd International Wild Equid Conference*, Prague, Czechia (presented by J. Beck)
- 2019 'Facts from feces: the utility of fecal DNA to assist in the conservation and management of wild equids' *2nd International Wild Equid Conference*, Prague, Czechia (presented by S. Oyler-McCance)
- 2019 'Associative behaviour in Przewalski's horses reintroduced to Mongolia'. *VII International Symposium on the Preservation of Przewalski's Horse*, Orenburg, Russia (with J. Gurnell). **Invited to give opening remarks**
- 2019 'Effect of Sterilizing Adult Males on Feral Horse Social and Reproductive Behavior'. *Animal Behavior Society Meeting*, Chicago, IL, USA (with K. Schoenecker and M. Cole)
- 2019 'Emerging tools to control feral horse populations in the western USA'. *18th Wildlife Damage Management Conference*, Starkville, MS, USA (presented by K. Schoenecker; with S. Ekernas)
- 2018 'Social system shapes differences in social behaviors of equids'. *International Society of Behavioural Ecology Congress*, Minneapolis, MN, USA (with K. Schoenecker)

- 2017 'Different behavior requires different management: the difference between horses and burros'. International Colloquium on Ecosystem Science and Celebration of 50 years of the Natural Resource Ecology Laboratory, Fort Collins, CO, USA (with K. Schoenecker)
- 2017 'Development and testing of new tools for the management of wild horses and burros'. *National Wild Horse and Burro Management Summit*, Salt Lake City, UT, USA (presented by K. Schoenecker)
- 2016 'Effect of environmental exposure time and collection method on DNA analysis of equid fecal samples'. *The Wildlife Society*, Raleigh, NC, USA (with K. Schoenecker et al.)
- 2016 'Developing a suitable radio collar for wild horses and burros'. *The Wildlife Society*, Raleigh, NC, USA (presented by K. Schoenecker)
- 2015 'Test of fecal sampling for estimating population sizes, diet, and genetic parameters of wild horse populations'. *NREL/ESS weekly seminar*, Colorado State University, CO, USA (with K. Schoenecker)
- 2015 'Developing a suitable radio collar for wild horses and burros'. *NREL/ESS weekly seminar*, Colorado State University, CO, USA (presented by K. Schoenecker)
- 2015 'Thundering hooves – conserving the world's wild equids'. *Ignite Biodiversity*, Fort Collins, CO, USA. **Invited speaker**
- 2012 'Vigilance and its links to social cohesion in a reintroduced equid'. *International Wild Equid Conference*, Vienna, Austria (with J. Gurnell)
- 2012 'Resource partitioning of sympatric shrew species in the Rocky Mountains of Colorado'. *American Society of Mammalogists Meeting*, Reno, NV, USA. (with C. McCain)
- 2012 'Body size, activity times, and geographic location are strongly associated with mammalian responses to anthropogenic climate change'. *American Society of Mammalogists Meeting*, Reno, NV, USA. (presented by C. McCain)
- 2011 'Differences in capture of harvest mice (*Reithrodontomys*) using Sherman and pitfall traps'. *American Society of Mammalogists Meeting*, Portland, OR, USA. (with C. McCain)
- 2011 'Small mammal decline in North America: an overview of processes, hypothesis, and evidence'. Organized symposium. *Joint meeting of the Australian Mammal Society and American Society of Mammalogists*, Portland, OR, USA. (presented by C. McCain) **Invited talk**
- 2008 'Forage resource utilisation in Mongolia: first results from a case study in the light of two concepts currently being used in range ecology'. *XXI Grassland/VIII Rangeland International Congress*, Hohhot, China. (presented by F. Joly)
- 2006 'The return of the wild horse'. *Scientific Meeting*, Zoological Society of London, London, UK. **Invited speaker**
- 2006 'Behavioral ecology of Przewalski horse (*Equus przewalskii*) reintroduced to Hustai National Park, Mongolia'. *Lunchtime seminar series*, University of Arizona, Tucson, Arizona, USA. **Invited speaker**
- 2006 'Steppe Forward Program: Ecology, Education and Conservation in Mongolia'. Conservation Programmes Staff Talk. Zoological Society of London, London, UK.
- 2006 'Capacity building for impact assessment in Mongolia'. *International Association for Impact Assessment Annual Conference*. Stavanger, Norway. (presented by O. Venn)
- 2006 *NEMO Trust Fund Project Review Workshop*, Ulaanbaatar, Mongolia.
- 2005 'Asiatic wild asses in the literature: what do we need to know now?'. *Asiatic Wild Ass Conference*, Hustai National Park, Mongolia.
- 2005 'Space use and social organization of endangered Mt. Graham red squirrels: it's lonely at the top'. *The Wildlife Society*, Madison, WI, USA. (presented by J. Koprowski)
- 2005 'Cone caching strategy and its impact on the Mt. Graham red squirrel population'. *Arizona and New Mexico Chapter of the Wildlife Society Meeting*, Gallup, NM, USA. (with J. Koprowski and S. Bertelsen)
- 2004 'Cone caching strategy and its impact on the Mt. Graham red squirrel population'. *American Society of Mammalogists Meeting*, Arcata, CA, USA. (with J. Koprowski and S. Bertelsen)
- 2004 'Space use and social organization of endangered Mt. Graham red squirrels: it's lonely at the top' *American Society of Mammalogists Meeting*, Arcata, CA, USA. (presented by J. Koprowski)
- 2004 'Space use and social organization of endangered Mt. Graham red squirrels: it's lonely at the top' *Arizona and New Mexico Chapter of the Wildlife Society Meeting*, Safford, Arizona, USA. (presented by J. Koprowski)
- 2003 'Effect of human and non-human disturbance on Mt. Graham red squirrels'. *Conference on the Ecology of the Mt. Graham Red Squirrel*, Safford, Arizona, USA. (with J. Koprowski)
- 2001 'Takhi reintroduction into Hustai National Park, Mongolia: Lessons learned'. *International Theriological Conference*, South Africa. (presented by L. Boyd)
- 2001 'Behavioral ecology of free-ranging Przewalski horse (*Equus przewalskii*) at Hustai National Park, Mongolia'. *British Ecological Society Winter Meeting*, Birmingham, UK. (with J. Gurnell)
- 2000 *Takhi Reintroduction Workshop*, Hustai National Park, Mongolia.
- 1999 'Use of biotope, distribution and social behavior of free-ranging Przewalski horses in Hustai Nuruu. *Vlth International Symposium on the Preservation of the Przewalski Horse*, Kiev, Ukraine. (presented by L. Boyd)

- 1999 'The home range and habitat use of free-ranging Przewalski horse harems at Hustain Nuruu National Park, Mongolia'. *Smithsonian Institute* at Hustai National Park, Mongolia.
- 1999 'Reintroduction of the Przewalski horse to Hustain Nuruu Reserve, Mongolia'. *Mammal Society Annual Conference*, Reading, UK.

Poster presentations

- 2022 *Ecological Society of America and Canadian Society of Ecology and Evolution joint meeting*, Montreal, Canada (presented by S. Esmaeili).
- 2022 *International Wildlife Fertility Conference*, Colorado Springs, CO, USA.
- 2022 *American Society of Mammalogists*, Tucson, AZ, USA (presented by S. Esmaeili).
- 2019 *2nd International Wild Equid Conference*, Prague, Czechia.
- 2018 *The Wildlife Society*, Cleveland, OH, USA.
- 2014 *International Behavioural Ecology Congress*, New York, NY, USA.
- 2008 *12th International Behavioural Ecology Congress*, Ithaca, NY, USA.
- 2006 *International Association for Impact Assessment Annual Conference*. Stavanger, Norway.
- 2004 *American Society of Mammalogists Meeting*, Arcata, CA, USA.
- 2004 *Mammal Society Annual Conference*, Leicester, UK.

Grants and funding - awarded and pending

- 2023 **National Science Foundation**: BIORETS: Sustainable Development Education Nexus (co-PI, with J. Moore (PI) and others) - \$599,671 (pending)
- 2023 **Morris Animal Foundation**: Understanding precursors of horse bites and kicks towards people to improve horse health and welfare and human safety (PI, with P. McGreevy) - \$85,600 (pending)
- 2023 **BLM**: Co-production of accessible curricula on Western wild horses and burros for K-12 and community audiences (co-PI, with S. Lynn (PI) - \$458,452
- 2022 **Peaceful Valley Donkey Rescue**: gift of \$19,500 to support feral donkey research in the Mojave desert/Death Valley.
- 2022 **SSC internal grant**: Support for the Equid Specialist Group taxonomy workshop (with P. Moehlman) - \$3,500
- 2022 **BLM**: Performance of the iUPOD Intrauterine Device for Long-Term Fertility Control in Free-roaming Mares (co-PI, with K. Schoenecker (PI), C. Gradil, and C. Davies) - \$567,890
- 2021 **Schutz Engel Trust**: Using behavioral indicators of wild horses on the range and in training to inform welfare (PI, with S. Matlock) - \$21,468
- 2019 **SSC internal grant**: Support for the International Wild Equid Conference and travel for Equid Specialist Group members - \$3,500
- 2018 **IUCN/SOS threatened species grant**: 'Conservation of the Critically Endangered African wild ass (*Equus africanus*) and the Endangered Grevy's zebra (*Equus grevyi*)' (with P. Moehlman and K. Schoenecker) - €49,900 (\$57,000)
- 2015 **BLM with USGS co-funding**: 'Demography of two wild burro populations in the western USA' (co-PI, with K. Schoenecker (PI), L. Zeigenfuss,, and K. Searle) - \$717,081
- 2015 **BLM with USGS co-funding**: 'Evaluating behavior and ecology of geldings among a breeding population' (PI, with K. Schoenecker) - \$826,099
- 2015 **BLM with USGS co-funding**: 'Evaluating behavior, demography, and ecology of spayed free-roaming mares' (PI, with K. Schoenecker) - \$772,151 (approved, but the project was indefinitely postponed)
- 2015 **BLM with USGS co-funding**: 'Population demography and ecology of wild horses in 2 sentinel herds in the Western United States' (co-PI, with K. Schoenecker (PI), and L. Zeigenfuss) - \$1,287,654
- 2014 **BLM with USGS co-funding**: 'Developing a suitable radio collar or radio tag for feral horses and burros' (co-PI, with K. Schoenecker (PI) & P. Griffin) - \$207,775
- 2014 **USGS**: 'Non-invasive genetic sampling of free-roaming horses to estimate population size, genetic diversity, and consumption of invasive species' (PI, with K. Schoenecker, P. Griffin. & S. Oyler-McCance) - \$250,869
- 2012 **Center for Collaborative Conservation**: scholarship to attend the International Wild Equid Conference 2012, Vienna, Austria - €395 (\$500)
- 2009 **European Commission**: 'Non-state actors and local authorities in development' (for Association TAKH) - €225,000 (\$304,000)
- 2008 **Royal Society for the Protection of Birds**: study of the birds at Khar Us Nuur, Mongolia - £700 (\$1,130)
- 2007 **Idea Wild**: in-kind funding of binoculars and telescopes - \$740
- 2005 **Zoological Society of London**: co-funding towards production of 'Mammals of Mongolia' field guide - \$5,000
- 2005 **World Bank Netherlands Trust Fund**: production of 'Mammals of Mongolia' field guide - \$15,000
- 2005 **Denver Zoological Foundation**: towards production of 'Birds of Mongolia' field guide - \$5,000

- 2004 **World Bank Netherlands Trust Fund:** “Raising Environmental Quality of Private Sector Development in Mongolia” (with Development Steppes NGO) - \$50,000
- 2001 **Marwell Preservation Trust:** thesis research in Mongolia - £1,000 (\$1,600)
- 1998-2000 **Foundation for Reserves Przewalski horse:** in-kind funding for thesis research in Mongolia
- 1998 **Dinam Charitable Trust:** thesis research in Mongolia - £250 (\$400)
- 1997 **International Fund for Animal Welfare:** thesis research in Mongolia - £1,000 (\$1,600)

Teaching

Postdoctoral advisor

- 2020 – 2023 Saeideh Esmaeili, NREL, Colorado State University
- 2020 – 2022 Jacob Hennig, USGS

Committee member

- 2023-present Erika Franson – Doctoral student, Colorado State University, USA
- 2019-2020 Jeffrey Rodriguez - Masters student, Colorado State University, USA

Thesis defense committee

- June 2023 **Opponent** for Anna Bernátková – Doctoral student, Czech University of Life Sciences, Czechia
- April 2020 **External examiner** for Redae Teclai – Doctoral student, Wits University, South Africa
- May 2018 **External examiner** for Sarah Medill - Doctoral student, University of Saskatchewan, Canada
- Nov 2017 **Examiner** for Charli de Vos - Masters student, University of Stellenbosch, South Africa

Classes

- Spring 2024 **Lecturer/Instructor** – FW370, Design of Fish and Wildlife Projects, Colorado State University
- Fall 2023 **Lecturer/Instructor** – FW104, Wildlife Ecology and Conservation, Colorado State University
- Fall 2022; Fall 2023 **Guest Lecturer** - ESS 501, Principles of Ecosystem Sustainability, Colorado State University
- Spring 2021; Fall 2022 **Guest Lecturer** – ANEQ 115 Equine Behavior, Colorado State University
- Spring 2020 **Guest Lecturer** – Wildlife in Ecological Systems Seminar, Colorado State University
- Fall 2018 **Guest Lecturer** – CSU Animal Welfare Judging Team
- Fall 2010 **Guest Lecturer** – Field Methods in Zoology & Botany, University of Colorado
- 2005-2006 **Lecturer/Instructor** – Conservation Biology and Field Techniques, National University of Mongolia - on 5 field courses for Mongolian undergraduates.
- 2005-2006 **Instructor** – Environmental Impact Assessment Best Practice – for Mongolian environmental professionals.
- 1999 – 2001 **Demonstrator** (TA equivalent) – Queen Mary, University of London
- ☐ Autumn 1999, 2000: Behavioral Ecology
 - ☐ Spring 2000, 2001: Statistics

Service

Academic/Professional

- ☐ Member of the Morris Animal Foundation Wildlife Scientific Advisory **Board** (2023)
- ☐ Moderator, trained ally, and poster judge at the Animal Behavior Society annual meeting (2023).
- ☐ Member of the Morris Animal Foundation Equine Behavior Scientific Advisory **Board** (2022)
- ☐ Community **outreach** with River Song Waldorf School summer nature camp (2022)
- ☐ **Judge** for behavioral ecology oral session at the Front Range Student Ecology Symposium (2021, 2022, 2023).
- ☐ Member of WDC_W507 wild horse and burro **working group** (2021-present).
- ☐ Virtual **mentor** for early-career professionals and graduate students at NACCB 2020 and Animal Behavior Society meeting 2020, and Animal Behavior Society meeting 2021.
- ☐ **Judge** for CURC 2020 posters at CSU (undergraduate presentations).
- ☐ **Facilitator** for MURALS 2019 at CSU (undergraduate presentations).
- ☐ Member of the Society of Conservation Biology conservation behavior working group (2019-present).
- ☐ Serving on the International Affairs and Global Engagement **Committee**, Warner College of Natural Resources, Colorado State University (2019-present)
- ☐ Undergraduate **mentor** under the SUPER and CURC program, Colorado State University (2019)
- ☐ Member of the Animal Behavior Society conservation behavior group (2018-present).
- ☐ Member of the Society of Conservation Biology Equity, Inclusion, and Diversity **Committee** (2017 to 2019)

- **Mentor** under the 2016 Women in Ecology Mentoring Scheme organized by the British Ecological Society (2017-2018)
- **Judge** of student posters and presentations at the Wildlife Society Meeting, Raleigh NC, 2016
- Postdoctoral **liaison** between the Museum/EBIO department and the Postdoctoral Association of Colorado (2011 to 2013)

Other

- K9 Coach volunteer (dog trainer) at Animal Friends Alliance, Fort Collins (2022-2023)
- Moderator of IUCN/SSC Equid Specialist Group Facebook group and Google newsgroup (2019-present)
- Moderator of the MongolBioweb newsgroup, which disseminated items about conservation and biology relevant to Mongolia among ~400 members (2005 to 2016)
- Volunteer for the LPO (French bird society) on bird surveys, Bonneli's Eagle breeding survey and as part of a network to transport injured wildlife (2007 to 2010)
- Volunteer for the Mammal Conservation Trust catching fallow deer in nets (1994 to 1997)
- Member of a University of Cambridge expedition surveying the northern group of the Cook Islands by yacht (1993)
- Volunteer at the Iberian Wolf Recovery Center, Portugal (1993)

Scientific society memberships

International Society for Behavioural Ecology, Society for Conservation Biology, The Wildlife Society, Animal Behavior Society, British Ecological Society, Mammal Society, academic member of the International Society for Equitation Science, Animal Training Academy.

Media

- *Scientific consultant*: *Equus* photography book by Tim Flach (2008. Abrams, London). *Caught in the Moment* program 9, Tigress Productions (2006). *Secrets of the Scat*, NOVA (2022).
- *Radio*: BBC Radio Scotland and BBC Radio 5 Live (2005); KUNC (National Public Radio in Colorado) (2020); Mountain West News Bureau/KUNM (2022).
- *Print*: English and Mongolian language newspapers about Mongolian Regional Red List (2005); Boulder Daily Camera (2014); Greenwire News (2020); CSU SOURCE (2020); Denver Post (2022); CSU SOURCE (2022).

Further training

2023 Karen Pryor Academy Dog Trainer Professional course (6 month course)
 2023 Foundations in R+ horse training – The Willing Equine (3 month online course)
 2023 Animal Emotions - Karolina Westlund (9 week online course)
 2022 Bayesian modeling for ecologists – Colorado State University, Fort Collins, Colorado.
 2022 Generalized Linear and Mixed Models in Ecology and Conservation Biology – Smithsonian-Mason School of Conservation, virtual.
 2021 Pro Dog Trainer + Geek certification (20-week games-based/concept dog trainer certification) – Absolute Dogs, virtual.
 2019 Department of Interior Aviation Safety Training (A-100, A-116, A-200) – USGS, virtual.
 2017 Wilderness First Aid – USGS, Fort Collins, Colorado
 2017 Data Carpentry Workshop, NDIC – Colorado State University, Fort Collins, Colorado.
 2017 Wildlife Necropsy Workshop – Colorado Parks and Wildlife, Fort Collins, Colorado.
 2014 NSC Defensive Driving Course 10th Edition R2 – USGS (subsequently kept up to date)
 2010 Effective Conservation Leadership course - Smithsonian Institution, Front Royal, Virginia.
 2006 Assessing threatened status of species using the IUCN Categories and Criteria Version 3.1 – ZSL and IUCN at National University of Mongolia.
 2004 Remote Sensing for Conservationists - American Museum of Natural History at the Southwestern Research Centre, AZ.
 2000 International School of Ethology 17th Workshop: Ethology and Conservation – Erice, Sicily.
 1998/1999 Arcview GIS training - Hustai National Park, Mongolia.
 Jan – Jun 1997 Intern - Red Wolf Reintroduction Project, Alligator River National Wildlife Refuge, North Carolina.