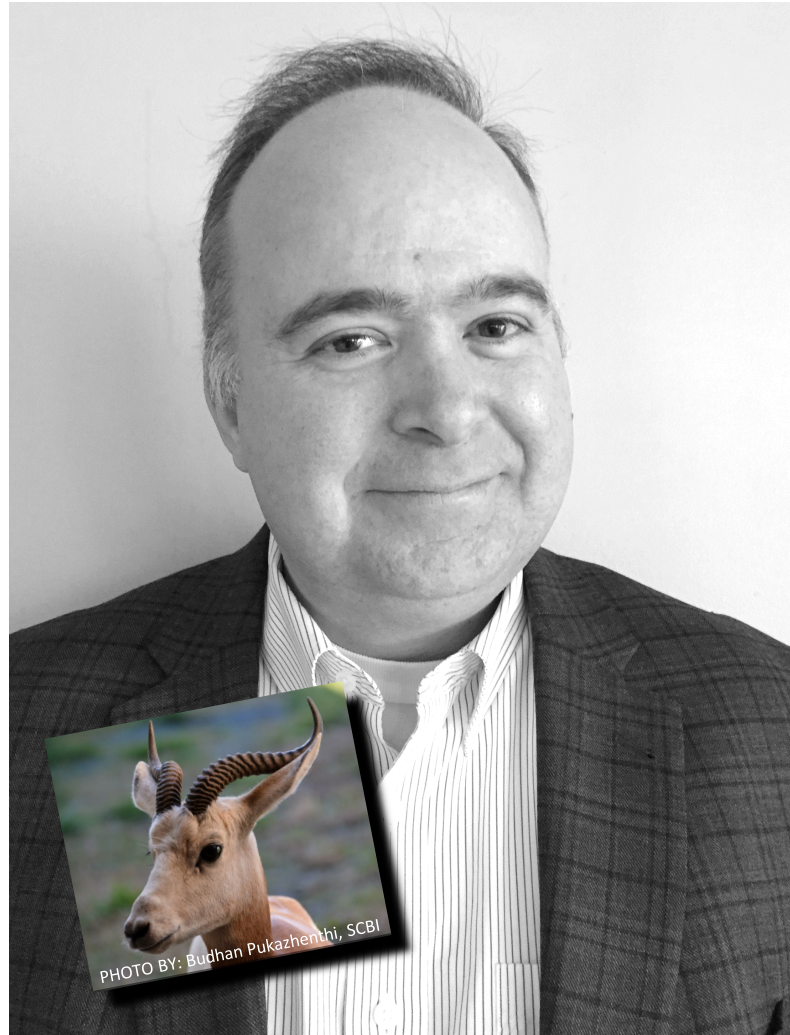


Friday, February 18, 2022, from 2 to 3 p.m.
Exploratory 3301 or register for Zoom link

SEMINAR SERIES:

**Using Genomics to Inform the Conservation Management of
Insurance Populations of Threatened Species**



Klaus-Peter Koepfli

Insurance populations play an increasingly important role in preventing extinction by preserving populations in captivity and maintaining what remains of the existing genetic diversity of a species. In my talk, I will present the results of an ongoing international collaborative research program into the conservation genomics of the dama gazelle (Nanger dama), the world's largest and rarest gazelle species. More than 2,300 dama gazelles representing two subspecies (addra and mhorr) are managed in zoos and private collections around the world, with the largest number of animals found on private ranches in North America, mostly in Texas. Insurance populations of mhorr gazelles were founded by only a small number of individuals, before this subspecies had become extinct in the wild, while addra gazelle insurance populations were founded by a larger group of individuals. We examined the genome-wide effects of these different founding histories by generating whole genome sequences of addra and mhorr gazelles, which included a chromosome-length genome assembly from one addra gazelle. Mhorr gazelles had almost 50% less heterozygosity, a genome occupied by more than 60% of runs of homozygosity, and about three times the number of putatively loss-of-function mutations compared to addra gazelles. I will discuss these and other results and how they help to inform the conservation management, genetic rescue, and restoration of this critically endangered antelope back into the wild.

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