TOPIC (choose ONE of these 10 topics; erase the rest):
5) Viral haemorrhagic fevers (hantavirus)

APPROACH (choose ONE of these 4 approaches; erase the rest):
2. Vector biology and eco-epidemiology

Hantavirus in rodents of Buenos Aires Province: are seroprevalence and abundance related?

Keywords: viral haemorrhagic fevers; vector biology; eco-epidemiology; rodents; seroprevalence; abundance related.

GOROSITO, Irene L[1], BELLOMO, Carla[2], MARTINEZ, Paula V[2], & BUSCH, Maria[1]

[1] Departamento de Ecología, Genética y Evolución, FCEN-UBA e Instituto de Ecología, Genética y Evolución de Buenos Aires, IEGEBA-CONICET, Ciudad Autónoma de Buenos Aires, Argentina
[2] Laboratorio Nacional de Referencia para Hantavirus, Instituto Nacional de Enfermedades Infecciosas (INEI) Administración Nacional de Laboratorio e Institutos de Salud (ANLIS) "Dr. C. G.Malbrán", Ciudad Autónoma de Buenos Aires, Argentina
E-mail address: iree26@gmail.com

Oligoryzomys flavescens and *Akodon azarae* are two rodent species living in agroecosystems of the Pampean region. *O. flavescens* is a reservoir of the Lechiguanas genotype, associated with Hantavirus Pulmonary Syndrome, whereas *Akodon azarae* is a reservoir of the Pergamino genotype, which has not been associated with human cases. Our objective was to evaluate whether there is a relationship between abundance and seroprevalence in both rodent species, as this may help to identify times of high risk of exposure to hantavirus for humans. Eleven longitudinal rodent capture-mark-recapture surveys were conducted in three railway embankments in agricultural landscapes (Exaltación de la Cruz Departament, Buenos Aires province, Argentina), from 2014 through 2016. The trapping effort was 1800 trap-nights per survey. During these surveys, demographic data and blood samples were collected. Blood samples were analyzed by means of ELISAs to determine the presence of hantavirus-specific antibodies. For each rodent species, the relationship between seroprevalence and its abundance was assessed through logit-linked binomial generalized linear models using the number of infected individuals by sampling session as the response variable (i.e., successees, with the corresponding number of tested blood samples per group as trials). Models containing the species' MNA as a predictor and the null models were evaluated. Using a multi-model approach, averaged parameters and their relative importance were calculated using Akaike weights (AIC). The main finding in this work was that both *A. azarae* and *O. flavescens* exhibit a negative relationship between prevalence and abundance. A possible explanation for this result is that populations reach their smaller numbers when these consist mainly of overwintering adults, which had longer exposures with higher chances of becoming infected, whereas larger populations are observed soon after the reproductive season, when new recruits are unlikely to be infected yet. Thus, the effect of prevalence and abundance on the risk of human exposure could be compensatory. This suggests that there would be no particular time of increased risk; prevention and surveillance should be permanent.