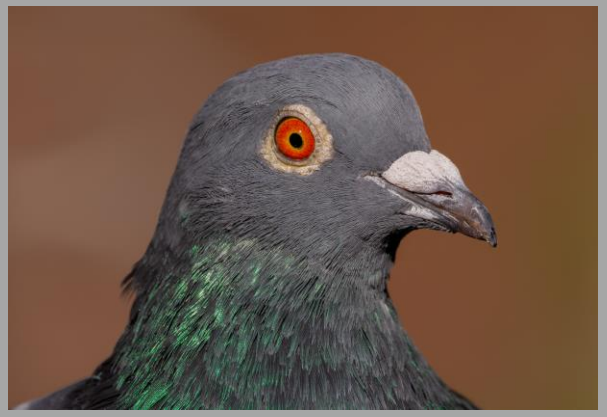





BECO

Behavioural Ecology and Ecophysiology

University of Antwerp

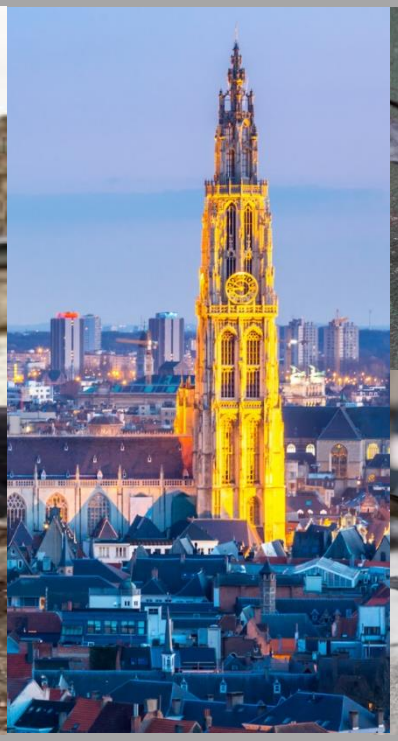


Feral Pigeons (Antwerp)

- Disease transmission
- Movement ecology
- Urbanisation
- Individual variation

Infection dynamics in the Anthropocene

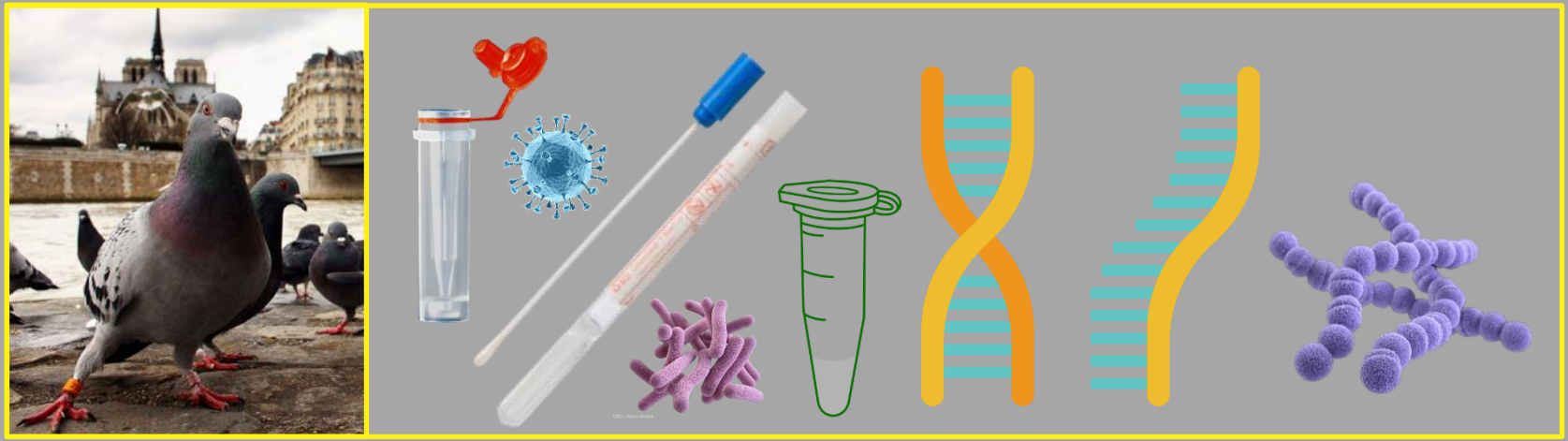
Tracking super spreaders and infection hotspots in the urban jungle



in collaboration with EVECO

Spatial variation in disease prevalence in urban environments

Cities offer a lot of feeding opportunities for wildlife, but these are often not equally distributed throughout the city. Clustering of resources can lead to high local pigeon abundances and hence a high risk of disease transmission. The aim is to search for and find these infection hotspots.



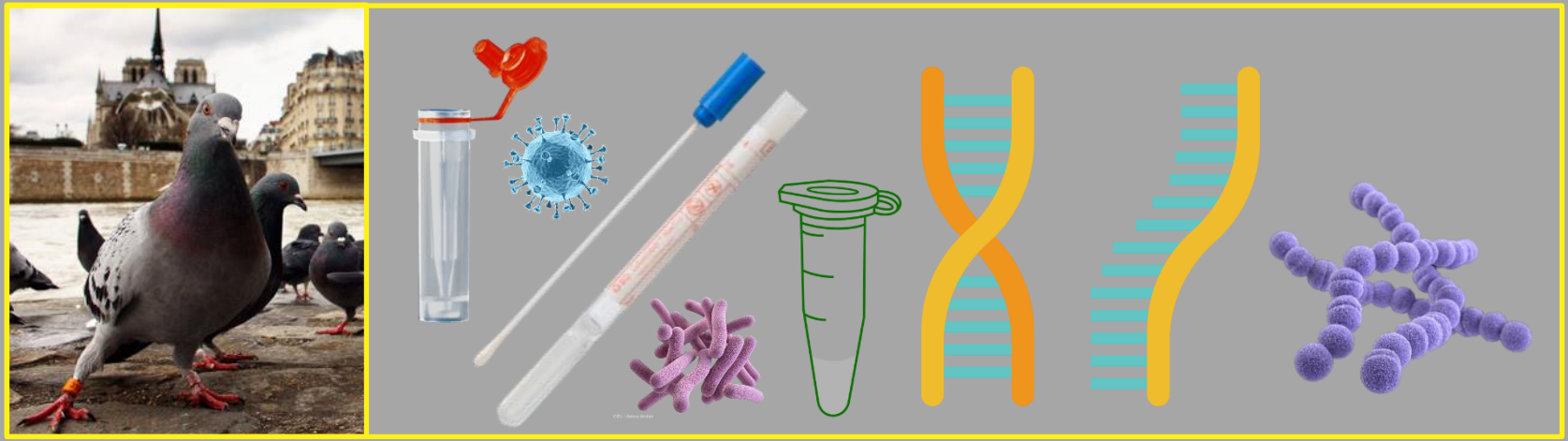
Description of tasks:

- Catching and sampling of feral pigeons in the City of Antwerp
- *DNA/RNA extractions, PCR, Sequencing*
- *Analysis of the spatial distribution of the disease*

Contact: Valentin Kiss ValentinAdrian.Kiss@uantwerpen.be or Bram Vanden Broecke Bram.VandenBroecke@uantwerpen.be

Spatial variation in disease prevalence in urban environments

Community transmission. Pigeons are not feeding alone in the city. Most of the time pigeons will forage within the larger avian community. These species can also become infected and transfer the pathogen outside the city. However, it is unclear what the prevalences are in these animals.



Description of tasks:

- Catching and sampling **the whole avian community** in the City of Antwerp
- *DNA/RNA extractions, PCR, Sequencing*
- *Analysis of the spatial distribution of the disease*

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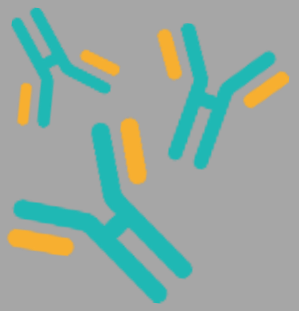
Immunity: not all pigeons will be equal

Becoming infected as well as the intensity of infection will depend on how well the immune system is functioning. Yet how and why differ individuals in immunity if that is such an important trait?



Description of tasks:

- Catching and sampling pigeons
- *Analysis of immune parameters*
- *Analysis of infection status*

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Lesser black-backed gulls (Zeebrugge)

- Parental cooperation
- Foraging ecology
- Early development
- Individual variation

On the spot: how to establish a territory?

- High breeding density areas are characterized by a higher breeding success. This suggests that there is a high level of competition to get and maintain these territories.
- By combining time lapse photography, behavioral observations and field experiments (manipulations of breeding density), we aim at understanding:

  1) how gulls invest their time to successfully establish a territory, offspring care and self-maintenance,

  2) how social interactions shape the acquisition and maintenance of territories, and ultimately

  3) relating those aspects to reproductive success

Description of tasks: Possibility to do fieldwork with wild seabirds (about 1 day per week during March and April). The rest of the year the work will be based at CDE. The student will receive support with statistical analysis.

Contact: wendt.mueller@uantwerpen.be






Canaries (CDE)

- Parental care
- Conflicts of interest
- Early development
- Cognition

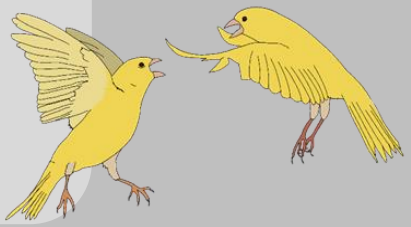
Conditions that may diminish the likelihood of the appearance of parental aggression

30-40% of female canaries start to **neglect** their chicks **or exert parental aggression** (feather plucking) towards their own nestlings before fledging.

Are there any conditions that may diminish the likelihood of the appearance of parental aggression?

Description of tasks: behavioural response tests on female canaries (aimed at finding conditions that may dimmish the likelihood of the appearance of parental aggression; ex: pairing with couples of their choice vs. forced mating, addition of physical enrichment…) and video analysis. The student will also receive support with statistical analysis of the data.

Location and timing: CDE, data collection in end of February/beginning of March-May (only MT)



Contact:
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Blue tits (CDE/Madrid)

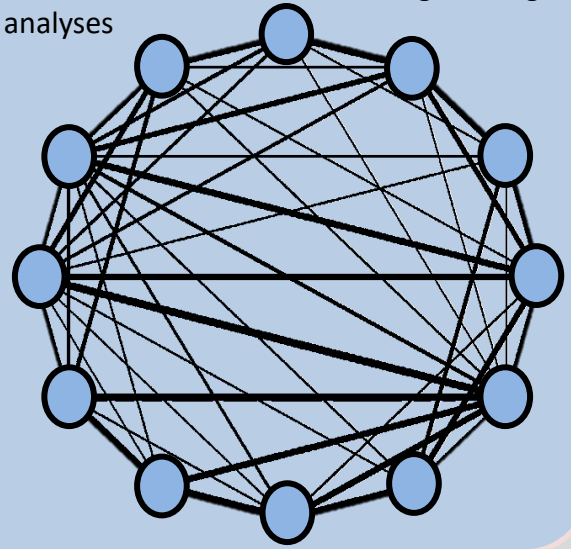
- **Parental care**
- **Conflicts of interest**
- **Early development**
- **Sibling competition**

Maternal programming of offspring social phenotype

Early life environment, including the position in the **family social network**, has long-term **effects on the future fitness** of individuals. Mothers can **prepare their offspring to thrive better under specific conditions.**

Could **nestlings' social phenotype** be **programmed for a particular family size?** How much depends on the **expected family size** and how much on the **actual family size**?

Description of tasks: elaboration of matrixes of interactions between nestlings through observation of video recordings for posterior analyses using a social networks approach.
The student will also receive support with statistical analysis of data.



Location and timing:
CDE, end November-February
(IP or MP possible)

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WE WANT
YOU !