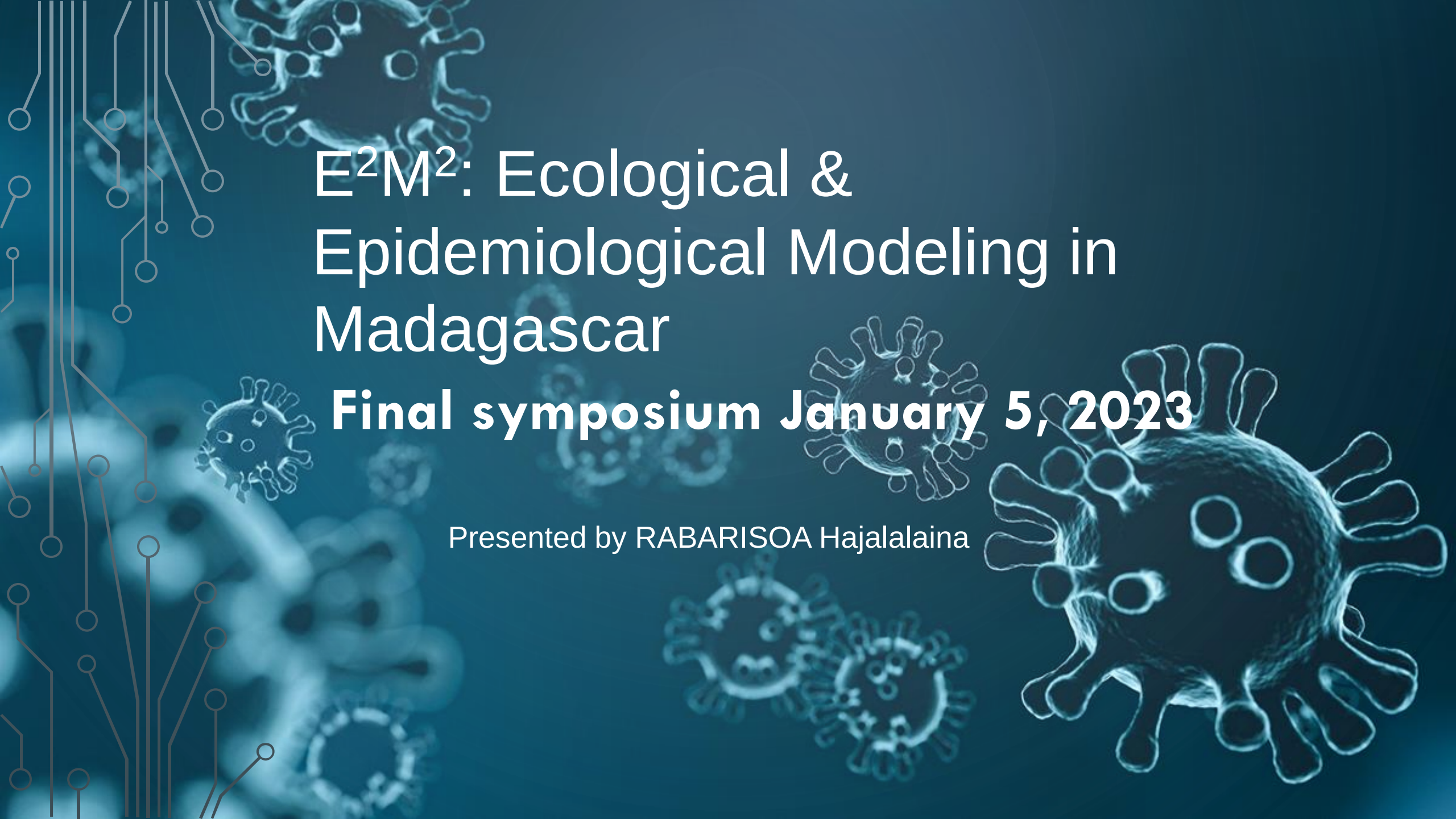


E^2M^2: Ecological & Epidemiological Modeling in Madagascar

Final symposium January 5, 2023

Presented by RABARISOA Hajalalaina

- Background: The Covid 19 disease caused many deaths to the hospitalized patients in the world according to WHO.
- Statistical question: what is the relationship between comorbidities and the outcome of hospitalized cases of Covid 19?
- Dynamical question: how does the vaccination affect the outcomes of Covid 19 to the diabetes patients?

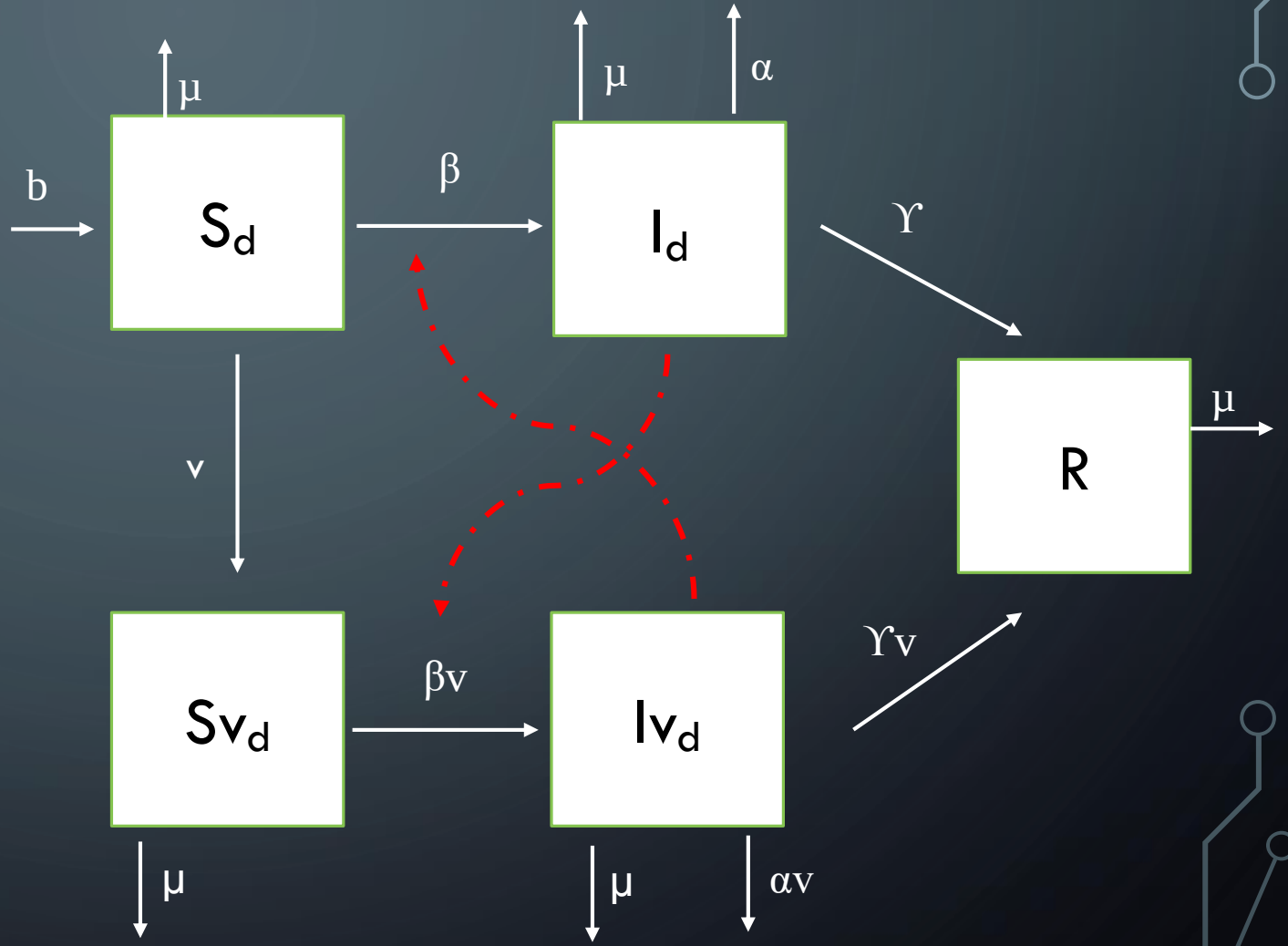
Statistical question: what is the relationship between comorbidities and the outcome of hospitalized cases of Covid 19?

- Response variable: mortality of patients
- Predictor variables:
    - X1= Age,
    - X2= Gender,
    - X3= Hypertension,
    - X4= Diabete
    - X5= Body Mass Index (BMI)
- Family: « binomial » Link: « logit »
- Hypothesis: Comorbidities increase the mortality in hospitalized patients of Covid 19
- R function: glmer(mortality_of_patients ~Age+Gender+Hypertension+Diabete+BMI + (1 | sites), family = “binomial”, link = “logit”, data= Data_Covid)

Dynamical question: how does the vaccination affect the outcomes of Covid 19 to the diabetes patients?

- Population: diabetes patients

Status	Process
S_d : Susceptible non vaccinated Sv_d : Susceptible vaccinated I_d : Infected non vaccinated Iv_d : Infected vaccianted R : Recovered	b : births, μ: natural mortality V: vaccination rate β: transmission rate in non vaccinated βv:transmission rate in vaccinated ϒ: recovery rate in non vaccinated ϒv: recovrey rate in vaccinated α: death rate due to infection in non vaccinated αv: death rate due to infection in vaccinated



Next step

- Collect more data for the statistical model
- Analyse our data
- Write an article


THANK YOU (MISAOTRA)