

Chiara Virgillito

Curriculum Vitae

Education

University Degrees

Type	Year	Institution	Notes (Degree, Experience,...)
PhD	01/11/2018- to date	University of Rome "Sapienza".	2021 Last year (3°) of Phd in MALATTIE INFETTIVE, MICROBIOLOGIA E SANITA' PUBBLICA
Master	2018	University of Turin.	Master in Mathematics (Laurea magistrale in Matematica LM-40 voto 106/110) Thesis title: "Studio di un sistema di reazione e diffusione in due dimensioni " (supervisor: Prof. Ezio Venturino)
Bachelor	2015	University of Catania.	Bachelor in Mathematics (Laurea Triennale in Matematica LM-35 voto 93/110) Thesis title: " Processi stocastici".

Additional Training

Type	Year	Institution	Notes
Online course	2021	Highland Statistics Ltd, Scotland (UK)	Introduction to Linear Mixed Effects Models and GLMM (frequentist)
Online course	2021	Highland Statistics Ltd, Scotland (UK)	Data Exploration, Regression, GLM & GAM with introduction to R
Online course	2020	Highland Statistics Ltd, Scotland (UK)	Zero-inflated GAMs and GAMMs for the analysis of spatial and spatial-temporal correlated data using R-INLA
Summer School	2019	Fondazione Edmund Mach	Summer School: "Vectorbite"
Summer School	2019	University of Trento	Summer School: "Data Science and Epidemic Models"

Course	2019	University of Trento	Bayesian Statistic
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Course	2019	University of Trento	Advanced topics in biomathematics
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Recent Research topics (during Phd)

I am a mathematics graduate student now attending my last year (III°) of PhD in Infectious Diseases and Public Health at the Department of Public Health and Infectious Diseases at “Sapienza” University of Rome. I am currently working with the vector-borne disease group developing mathematical and statistical models to study the spatial-temporal distribution of mosquitoes and their pathogens. The mathematical models are mostly based on partial differential equations while statistical models are univariate multivariate and regression analyses using both frequentist and Bayesian approaches. Recently, I have focused on the study of advanced spatial models, where I have used stochastic partial differential equations to describe the spatial-temporal correlation on ecological data.

Computer skills

Operating systems: Windows.

Mathematical software: MatLab, Mathematica.

Statistical software: R, R-studio.

PUBBLICAZIONI SCIENTIFICHE IN EXTENSO

IF=Impact Factor

1) Perugini E, Guelbeogo WM, Calzetta M, Manzi S, **Virgillito C**, Caputo B, Pichler V, Ranson H, Sagnon N, Della Torre A, Pombi M. Behavioural plasticity of *Anopheles coluzzii* and *Anopheles arabiensis* undermines LLIN community protective effect in a Sudanese-savannah village in Burkina Faso. *Parasit Vectors*. 2020 Jun 1;13(1):277. doi: 10.1186/s13071-020-04142-x. PMID: 32487147; PMCID: PMC7268364. IF=3.8

2) **Virgillito, C.**, Manica M., Marini G., Caputo B., della Torre A., Rosà R. Modelling arthropod active dispersal using Partial Differential Equations: the case of the mosquito *Aedes albopictus*. *Ecological Modelling*. 2021. doi.org/10.1016/j.ecolmodel.2021.109658. IF=2.27

3) Ngom, El Hadji Malick, **Virgillito, Chiara**, Manica, Mattia, Rosà, Roberto, Pichler, Verena, Sarleti Noemi, Isseu, Kassé, Diallo, Mawlouth, della Torre Alessandra, Dia, Ibrahima, Caputo Beniamino. Entomological survey in two Senegalese villages reveals discrepancies in results obtained by two traps targeting host-seeking mosquitoes. *Insects* 2021, 12(8), 692; doi.org/10.3390/insects12080692. IF=1.8

4) Caputo, B., Langella, G., Petrella, V., **Virgillito, C.**, Manica, M., Filipponi, F., Varone, M., Primo, P., Puggioli, A., Bellini, R., D'Antonio, C., Iesu, L., Tullo, L., Rizzo, C., Longobardi, A., Sollazzo, G., Perrotta, M. M., Fabozzi, M., Palmieri, F., Saccone, G, Rosà, R., della Torre, A., Salvemini, M. *Aedes albopictus* bionomics data collection by citizen participation on Procida Island, a promising Mediterranean site for the assessment of innovative and community-based integrated pest management methods. *PLoS Negl Trop Dis*. 2021 Sep 16;15(9):e0009698. doi: 10.1371/journal.pntd.0009698. PMID: 34529653; PMCID: PMC8445450. IF=4.4

5) Caputo B, Tondossoma N, **Virgillito C**, Pichler V, Serini P, Calzetta M, Manica M, Coulibaly ZI, Dia I, Akre MA, Offianan A, Torre AD. Is Côte D'Ivoire a new high hybridization zone for the two major malaria vectors, *Anopheles coluzzii* and *An. gambiae* (Diptera, Culicidae)? *Infect Genet Evol.* 2022 Jan 18:105215. doi: 10.1016/j.meegid.2022.105215. Epub ahead of print. PMID: 35063691. IF=3.3

6) **Virgillito, C.**, Manica, M., Marini, G., Rosà, R., della Torre, A., Martini, S., Drago, A., Baseggio, A., Caputo, B. Evaluation of *Bacillus thuringiensis subsp. israelensis* and *Bacillus sphaericus* combination against *Culex pipiens* in high vegetated ditches. Accepted in *Journal of American Mosquito Control Association* (January 2022). IF=0.86

ABSTRACTS E POSTER A CONGRESSI

2021

- 1 Virgillito C, Manica M, Marini G, Caputo B, Rosà R, della Torre A, Bayesian statistical models to evaluate the efficacy of traditional and innovative mosquito control interventions, Poster Online and Abstract, XXXI National Conference of Italian Society of Parasitology, Rome, Italy, June 16-19, 2021.

2020

- 1 Virgillito C, Marini G, Manica M, Caputo B, della Torre A, Rosà R Mathematical modelling of mosquitoes dispersal. Poster- 11th Conference on Dynamical Systems Applied to Biology and Natural Sciences DSABNS 2020 Trento, Italy, February 4-7, 2020
- 2 Virgillito C, Caputo B, Manica M, Rosà R, della Torre A. Mathematical modelling of flying-mosquitoes dispersal: a PDE based approach A. ISTISAN Congressi 20/C1 - XI Seminar - PhD Day. COVID-19: Facing a multi(face)phase pandemic. Virtual Meeting. Organized by the Italian National Institute of Health and Sapienza University of Rome. September 17 and 24, October 1 and 8, 2020. Abstract book

2019

- 1 Virgillito C, Caputo B, della Torre Construction of statistical-mathematical models for the study, control and evolution of the spread of pathogenic mosquitoes X Seminar - PhD Day. Democracy for Science - Science for Democracy. Istituto Superiore di Sanità. Rome, May 17, 2019. Abstract book.
- 2 Virgillito C, Marini G, Manica M, Caputo B, della Torre A, Rosà R Mathematical modelling of mosquitoes dispersal. Poster- 11th Conference on Dynamical Systems Applied to Biology and Natural Sciences DSABNS 2020 Trento, Italy, December 16, 2019
- 3 Athens, Greece, participation to Aedes Invasive Mosquitoes COST ACTION (AIM) Conference.

Luogo e Data

Roma 22/01/2022