

Curriculum Vitae di Andrea Pugliese

WORK EXPERIENCE

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| 2005 - now | Full Professor
Department of Mathematics, University of Trento, Italy.
Since 2005, I have been Full Professor in Mathematical Analysis and Mathematical Biology. I have been teaching in the degree courses in Mathematics, Quantitative and Computational Biology, Computer Sciences and others. During this period I have been Department Chairman (2012-15), member of the Academic Senate (2018-21) and delegate to the degree courses of the Mathematics Department (2021-24 and . |
| February-April 2016 | Visiting Professor
Department of Mathematics, Arizona State University, United States. |
| 1992-2004 | Associate Professor
Department of Mathematics, University of Trento, Italy |
| 1983-1992 | Assistant Professor
Department of Mathematics, University of Trento, Italy. |

EDUCATION AND TRAINING

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| 1986 | Ph.D. in Ecology and Evolution
State University of New York at Stony Brook
▪ Title of Ph.D. Thesis “Optimal life history models in perennial plants and applications to <i>Smilacina racemosa</i> ” |
| 1978 | M.Sc. (“Laurea”) in Mathematics
University of Rome “La Sapienza”
▪ Title of M.Sc. Thesis “Periodic solutions for some epidemic models” |

WORK ACTIVITIES

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| Awards | ▪ Unit Coordinator of the Consortium EYWA, winner of the EIC Horizon Prize on Early Warning for Epidemics (January 2022)
▪ Winner of Fulbright fellowship the Department of Ecology and Evolutionary Biology of Princeton University (1997) |
| Editorial activity | ▪ member of the Board of Editors of the Journal of Mathematical Biology (2001-)
▪ member of the Board of Editors of the Journal of Biological Dynamics (2008-)
▪ member of the Board of Editors of the Journal of Mathematical Analysis and Applications (2022-2025),
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| Administrative roles | ▪ member of the Board of the European Society for Mathematical and Theoretical Biology (2028-14); President (2011-14)
▪ chairman of the Department of Mathematics, University of Trento (2012-15)
▪ member of the Academic Senate, University of Trento (2018-21)
▪ coordinator of the teaching activities of the Department of Mathematics, University of Trento (2021-24)
▪ member of the Board (Consiglio di Amministrazione) of COSBI (Fondazione The Microsoft Research - University of Trento Centre for Computational and Systems Biology) (2021-) |

Research Grants

Completed grants:

- MUR PNRR BaC PER INF-ACT S4 “Behaviour and Sentiment Monitoring and Modelling for Outbreak Control” total grant amount Euro 1,999,980 (unit coordinator)
- MUR-PRIN 2020 “Integrated Mathematical Approaches to Socio-Epidemiological Dynamics” total grant amount 464.759 Euro–22/03/2022-21/03-1025–unit coordinator]
- EU MSCA “COMPLEXDYNAMICS-PHIM”, 180,277.20 Euro, February 2019-February 2021, supervisor
- PAT (Autonomous Province of Trento) “Laboratory of Excellence for Epidemiology and Modelling. Facing the introduction and spread of Invasive Alien Species (IAS) into the territory of the Autonomous Province of Trento” (LExEM), 1,165,478.70 Euro, September 2013-September 2016, unit coordinator
- EU FP-7 “Modelling the spread of pandemic influenza and strategies for its containment and mitigation” (FLUMODCONT), 2,191,546 Euro, June 2009-May 2012, PI

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**Invited participations to
scientific conferences
(recent years)**

- 2026, BIRS Workshop on “New Mathematical Theory in Eco-Evolutionary Modelling of Host-Symbiont Communities”, Banff, Canada, February 8-13
- 2025, SMB Society for Mathematical Biology Annual Meeting, Edmonton, Canada, July 14-18, 2025, invited speaker to minisymposium
- 2025, on-line conference “Mathematical modelling in biology and medicine”, May 19-23, <https://temp-uilepjduseopbidymdim.webadorsite.com/conference>
- 2025, DSABNS2025, 16th Conference on Dynamical Systems Applied to Biology and Natural Sciences, Naples, January 20-24, 2025, invited speaker
- 2025, Deterministic and Stochastic Evolution Equations, Scuola Normale Superiore, Pisa, January 13-17, 2025, invited speaker
- 2024, NAMAS, Conference “Numerical Analysis & Modelling in Applied Sciences“, Gaeta, September 16-20, 2024, invited plenary speaker
- 2024, 13th European Conference on Mathematical and Theoretical Biology,, invited speaker to the Mini-Symposium “Data-driven approaches in infectious disease modelling”, Toledo, July 24, 2024
- 2024, 9th European Congress of Mathematics, organizer of the Minisymposium “Mathematical Modelling in Life Sciences”, Sevilla, July 15-19, 2024
- 2024, Kick-off meeting of the PNRR project “Mathematical Modelling for a Sustainable Circular Economy in Ecosystems”, Perugia, February 29 – March 1, 2024, invited speaker
- 2024, DSABNS2024, 15th Conference on Dynamical Systems Applied to Biology and Natural Sciences, Caparica, Portugal, February 6-9, 2024, invited speaker
- 2024, Mini-Symposium on Epidemic Modelling, Delft, January 9, invited speaker
- 2023, Workshop on epidemics modelling, RICAM, Linz, invited speaker
- 2023, XXII Congresso UMI, Pisa, invited speaker to the Special Session “Mathematics for Life Sciences”
- 2023, Workshop on Epidemic Modelling: Current Challenges, Girona, Spain, invited speaker
- 2023, Conference on Computational and Mathematical Population Dynamics (CMPD6), Winnipeg, Canada, member of Scientific Committee and minisymposium organizer
- 2023, 13th Conference on Dynamical Systems Applied to Biology and Natural Sciences (DSABNS2023), Bilbao, Spain, invited speaker
- 2022, Workshop on *Mathematical Modeling of Self Organization in medicine, biology and ecology* MMSEOR2022, Palermo, invited speaker
- 2022, Virtual 13th Conference on Dynamical Systems Applied to Biology and Natural Sciences (DSABNS), invited speaker
- 2021, 8th European Congress of Mathematics, on-line, invited speaker to minisymposium
- 2021, Virtual Conference of Society for Mathematical Biology (SMB), invited speaker to minisymposium
- 2021, Colloquio Matematico dell’UMI, on-line, invited speaker
- 2020, 1st on-line Colloquium of INdAM (National Institute of Advanced Mathematics), invited speaker
- 2020, Virtual Workshop “Modeling the propagation of Covid-19”, CAMS, Paris, invited speaker
- 2020, Workshop on "Mathematical Modeling and Statistical Analysis of Infectious Disease Outbreaks", CIRM, Luminy, Marseille, invited speaker
- 2019, Workshop on Mathematical Ecology, Fields Institute for Research in Mathematical Sciences, Queen's University, Canada, invited speaker
- 2019, Distinguished Lecturer, Laboratory for Industrial and Applied Mathematics, York University, Toronto
- 2018, Workshop Accademia dei Lincei "Mathematics for BioMedicine, Roma. invited speaker
- 2018, 11th European Conference on Mathematical and Theoretical Biology, Lisbon, plenary speaker
- 2018, Conference "New Trends in Mathematical Biology", CRM, Barcelona, invited speaker
- 2018, Workshop "Populations in epidemics and ecology: Modeling and numerical simulations.", BCAM, Bilbao, invited speaker
- 2018, Workshop "Disease Ecology and Eco-epidemiology", Mathematical Biosciences Institute, Columbus, USA, invited speaker
- 2018, 9th Workshop Dynamical Systems Applied to Biology and Natural Sciences, (DSABNS2018) Torino, plenary speaker

Publications and metrics

- Total number of publications in peer-review journals (Scopus): 119
- Total number of citations (Scopus): 2,487
- H-index (Scopus): 31

Complete list of publications: <https://orcid.org/0000-0002-3512-8560>

Selected publications:

- Cox, V. M., Tiley, K., Rosà, R., Pugliese, A., Angelini, P., Carrieri, M., Bhatt, S., Tamba, M., Marini, G., Calzolari, M., & Dorigatti, I. (2025). Meteorological and environmental drivers of West Nile virus prevalence in *Culex pipiens* mosquitoes in Emilia-Romagna, Italy in 2013 to 2022. *PLOS Pathogens* 21(12): e1013753. <https://doi.org/10.1371/journal.ppat.1013753>
- Britton, T., Pugliese, A. A multi-season epidemic model with random genetic drift and transmissibility. *J. Math. Biol.* **91**, 80 (2025). <https://doi.org/10.1007/s00285-025-02308-8>
- Tian, X., Guo, S., Iannelli, M. and Pugliese, A. Age-structured SIS-B epidemic model with limited environmental cleaning capacity. *Nonlinear Differ. Equ. Appl.* **32**, 113 (2025). <https://doi.org/10.1007/s00030-025-01103-0>
- De Nardi, A., Marini, G., Dorigatti, I., Rosà, R., Tamba, M., Gelmini, L., Prosperi, A., Menegale, F., Poletti, P., Calzolari, M., & Pugliese, A. (2025). Quantifying West Nile virus circulation in the avian host population in Northern Italy. *Infectious Disease Modelling*, **10**(2), 375–386. <https://doi.org/https://doi.org/10.1016/j.idm.2024.12.009>
- Sabbatino, M., De Reggi, S. & Pugliese, A. (2025). A Theoretical Analysis of Mass Testing Strategies to Control Epidemics. *Bull Math Biol* **87**, 22, <https://doi.org/10.1007/s11538-024-01387-w>
- Tian, X., Guo, S., Iannelli, M., & Pugliese, A. (2025). Self-regulation and resource dependent growth rates: A size-structured predator-prey model. *Journal of Mathematical Analysis and Applications*, **546**(2), 129231. <https://doi.org/10.1016/j.jmaa.2025.129231>
- Kaklamanos, P., Pugliese, A., Sensi, M., & Sottile, S. (2024). A geometric analysis of the SIRS model with secondary infections. *SIAM J. of Applied Mathematics*, **84**(2), 661–686, <https://doi.org/10.1137/23M1565632>
- Lorenzi, T., Pugliese, A., Sensi, M. and Zardini A. Evolutionary dynamics in an SI epidemic model with phenotype-structured susceptible compartment. *J. Math. Biol.* **83**, 72 (2021). <https://doi.org/10.1007/s00285-021-01703-1>
- N. Parolini, L. Dedé, P. F. Antonietti, G. Ardenghi, A. Manzoni, E. Miglio, A. Pugliese, M. Verani and A. Quarteroni (2021) SUIHTER: a new mathematical model for COVID-19. Application to the analysis of the second epidemic outbreak in Italy. *Proc. R. Soc. A* 477: 20210027 <http://doi.org/10.1098/rspa.2021.0027>
- Jardón-Kojakhmetov, H., Kuehn, C., Pugliese, A. & Sensi, M. (2021). A geometric analysis of the SIR, SIRS and SIRWS epidemiological models. *Nonlinear Anal. Real World Appl.* **58**, 103220. <https://doi.org/10.1016/j.nonrwa.2020.103220>
- Marini, G., Calzolari, M., Angelini, P., Bellini, R., Bellini, S., Bolzoni, L., Torri, D., Defilippo, F., Dorigatti, I., Nikolay, B., Pugliese, A., Rosà, R., Tamba, M., (2020). A quantitative comparison of West Nile virus incidence from 2013 to 2018 in Emilia-Romagna, Italy. *PLoS Negl. Trop. Dis.* **14**, e0007953. <https://doi.org/10.1371/journal.pntd.0007953>
- Pfab, F., Rossi Stacconi, M. V., Anfora, G., Grassi, A., Walton, V., & Pugliese, A. (2018). Optimized timing of parasitoid release: a mathematical model for biological control of *Drosophila suzukii*. *Theoretical Ecology*. **11**, 489–501 <https://doi.org/10.1007/s12080-018-0382-3>
- I. Marinelli, A. van Lier; H. E de Melker, A. Pugliese, M. van Boven, Estimation of age-specific rates of reactivation and immune boosting of the varicella zoster virus. *Epidemics* 19:1-12 (2017), doi: 10.1016/j.epidem.2016.11.001
- Guzzetta G, Montarsi F, Baldacchino FA, Metz M, Capelli G, Rizzoli A, Pugliese A, Rosà R, Poletti P, Merler S. Potential Risk of Dengue and Chikungunya Outbreaks in Northern Italy Based on a Population Model of *Aedes albopictus* (Diptera: Culicidae). *PLoS Negl Trop Dis* 10(6): e0004762 (2016). doi: 10.1371/journal.pntd.0004762.
- L. Bolzoni, A. Pugliese, R. Rosà. The role of heterogeneity on the invasion probability of mosquito-borne diseases in multi-host models, *J. Theor. Biol.* **377**: 25-35 (2015), doi:10.1016/j.jtbi.2015.03.027
- A. Gandolfi, A. Pugliese and C. Sinisgalli. Epidemic dynamics and host immune response: a nested approach, *J Math Biol.* **70**: 399-435 (2015), DOI: 10.1007/s00285-014-0769-8
- M. Iannelli, A. Pugliese, An introduction to mathematical population dynamics, Italia: Springer International Publishing, 2014, DOI: 10.1007/978-3-319-03026-5
- D. Breda, O. Diekmann, W.F. de Graaf, A. Pugliese and R. Vermiglio, On the formulation of epidemic models (an appraisal of Kermack and McKendrick), *J. Biol. Dynamics*, **6**:103-117 (2012), [DOI:10.1080/17513758.2012.716454](https://doi.org/10.1080/17513758.2012.716454)
- S. Merler, M. Ajelli, A. Pugliese and N. M. Ferguson, Determinants of the spatiotemporal dynamics of the 2009 H1N1 pandemic in Europe: implications for real-time modelling, *PLoS Comp. Biol.*, **7**(9): e1002205 (2011), doi:10.1371/journal.pcbi.1002205
- A. D. Barbour and A. Pugliese, Asymptotic behaviour of a metapopulation model, *Annals Applied Probability* **15**: 1306-1338 (2005)

PERSONAL SKILLS

Mother tongue(s)	Italian
Other language(s)	English (C1)
Professional skills	▪ Mathematical modelling and analysis ▪ Statistics applied to epidemic data ▪ Academic writing ▪ Project management
Digital skills	▪ Programming languages and environments: R, Matlab, C/C++, elements of Fortran ▪ Office and related suites: LaTeX, basic elements of Microsoft Office and html

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.