PERSONAL INFORMATION

Piero Poletti

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Enterprise	University	EPR
☐ Management Level	☐ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
☐ Mid-Management Level	☐ Associate Professor	X Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

2021-present **Research scientist (tenure track)**
Fondazione Bruno Kessler, Trento, Italy
Business or sector Research

2016-2021 **Research scientist (post-doc)**
Fondazione Bruno Kessler, Trento, Italy
Business or sector Research

2012-2016 **Research scientist (post-doc)**
Department of Policy Analysis and Public Management, Bocconi University, Milano, Italy
Business or sector Research

2010-2011 **Research scientist (post-doc)**
Fondazione Bruno Kessler, Trento, Italy
Business or sector Research

2010 **Research scientist (post-doc)**
DONDENA Centre for Research on Social Dynamics and Public Policy, Bocconi University, Milano, Italy
Business or sector Research

2007 **Research fellow**
Fondazione Bruno Kessler, Trento, Italy
Business or sector Research

EDUCATION AND TRAINING

2007 – 2010 Ph.D. in Mathematics *EQF level 8*
Department of Mathematics, University of Trento, Trento, Italy

- Mathematical modelling applied to infectious diseases
- Statistical inference based on Bayesian approaches
- Programming in C, R

2003 – 2006 MSc Degree in Mathematics *EQF level 7*
Department of Mathematics, University of Trento, Trento, Italy

1999 – 2003 BSc Degree in Mathematics *EQF level 6*
Department of Mathematics, University of Trento, Trento, Italy

WORK ACTIVITIES

Awards

- 2018: Winner of the D4R Big Data Challenge
- 2015: Winner of 15th Bellman Prize
- 2011: Best Ph.D. Thesis Award, University of Trento, Italy

Grants

- Joint Lab FBK-ISS: EPIQ – Quantitative Epidemiology (€ 366,000) Epidemiological modeling of emerging and established infections
- HORIZON-HLTH-2021-CORONA-01 VERDI (2021-2024, € 110,000) Evaluation of SARS-CoV-2 variants in pregnancy and pediatric cohorts
- H2020-EU.1.2.2. – FETHPC-02-2017 VESTEC (2018-2021, € 230,000) High Performance Computing and extreme visualization for urgent decision-making
- Fondazione VRT: COVIDVAX (2021-2022, €25.000) Impatto della vaccinazione COVID19 su mortalita` e misure di mitigazione
- Agenzia Italiana per la Cooperazione allo Sviluppo: SurvEthi (2018-2021, € 543,677) Reinforcement of the surveillance system and control of infectious diseases in Ethiopia
- Fondazione VRT: COVIDTN (2020-2020, €87.300) Epidemiologia e trasmissione di COVID-19 in Trentino
- Merck Sharp & Dohme Corp: Hypothesis of exogenous boosting and epidemiology of varicella and herpes zoster in the US (2018-2019, €98.000)
- Province of Trento: LEXEM (2013-2017, € 216,390) Laboratory of Excellence for Epidemiology and Modelling on invasive arthropods in the territory of the Province of Trento
- ERC Starting Grant 2011 to Alessia Melegaro (grant agreement no.283955): DECIDE (2012-2017, 1,210,000€) The impact of Demographic Changes on Infectious Diseases transmission and control in middle and low income countries
- FP7-ICT – ICT-2007.8.4: EPIWORK (2009-2013, € 272,700) Framework for an epidemic forecast infrastructure
- Italian Ministry of Health: Supporto alle attività istituzionali correnti del CCM con particolare riguardo alle attività di sorveglianza, analisi e valutazione dei rischi per la salute pubblica nell'ambito della realizzazione e gestione di una sala situazioni e di una rete d'informazione rapida. (2009-2011, € 140,000)
- FP7-HEALTH - HEALTH-2007-2.3.3-6: FLUMODCONT (2008-2011, € 212,757) Development of pandemic influenza containment and mitigation strategies
- European Centre for Disease Prevention and Control (ECDC) (2009-2012, €26.449) Vaccine preventable diseases modelling in the European Union and EEA/EFTA countries: forecasting the effect of introducing a new vaccine in a national/regional program
- Italian Ministry of Health: Chikungunya virus infection: epidemiological and clinical features (2008-2011, € 100,000)

PERSONAL SKILLS

Mother tongue(s)	Italian
Other language(s)	English, fluent
Job-related skills	Management of projects, supervision of students and of young researchers, scientific research
Digital skills	Programming in C, R

ADDITIONAL INFORMATION

During the COVID-19 pandemic, I participated to all the key activities conducted within the Center for Health Emergencies related with the provision of model estimates on the spread of SARS-CoV-2 to the Italian Institute of Public Health and the Italian Ministry of Health. Since 2013, I am reviewer of project grant applications for the Medical Research Council, UK. Between 2015 and 2017, I was invited as an expert modeller by the Public Health of England (PHE) and I served as expert consultant for MERCK Inc in the field of modelling Varicella and Zoster epidemiology. In 2019, I was involved by the World Health Organization (WHO) in the co-creation and co-development of the Draft1 of the WHO Immunization Agenda 2030.

Statement of Research Interests

My primary research interest is the investigation of the dynamics of infectious diseases using computational models applied to real-world data with the goal of informing public health decisions. My research activity aims at evaluating alternative public policies and at improving the understanding of observed epidemiological patterns, by identifying risk populations and quantifying the contribution of different factors (e.g., mobility and mixing patterns, eco-climatic condtions, demography, spontaneous behavioural responses to the risk of infection) in shaping the transmission of infectious diseases in humans. My expertise includes the development, simulation, and analysis of compartmental and agent-based models, the design and management of data collection, the adoption of statistical inference and Bayesian approaches to analyse epidemiological records, and the performance of cost-effectiveness analyses. My past research focused on a variety of infectious diseases including COVID-19, measles, varicella-zoster virus, Zika, chikungunya, dengue, respiratory syncytial virus, influenza.

Publications

total number of publications in peer-review journals: 56
total Impact Factor (IF) (average IF/paper): 347.1 (6.2)
total number of citations: 1613
H index (Scopus): 26

1. Q.H. Liu, J. Zhang, C. Peng, M. Litvinova, S. Huang, P. Poletti, F. Trentini, G. Guzzetta, V. Marziano, T. Zhou, C. Viboud, A. I. Bento, J. Lv, A. Vespignani, S. Merler, H. Yu, and M. Ajelli. Model-based evaluation of alternative reactive class closure strategies against COVID-19. Nature Communications, 13(1):322, 2022. [impact factor: 14.919].
   Analysis of different testing strategies and class closures policies for interrupting the transmission of SARS-CoV-2 at school
2. V. Marziano, G. Guzzetta, A. Mammone, F. Riccardo, P. Poletti, F. Trentini, M. Manica, A. Siddu, A. Bella, P. Stefanelli, P. Pezzotti, M. Ajelli, S. Brusaferro, G. Rezza, and S. Merler. The effect of COVID-19 vaccination in Italy and perspectives for living with the virus. Nature Communications, 12(1):7272, 2021. [impact factor: 14.919].
   Evaluation of the COVID-19 vaccination program in Italy
3. M. Manica, G.Guzzetta, F. Riccardo, A. Valenti, P. Poletti, V. Marziano, F. Trentini, X. Andrianou, A. Mateo-Urdiales, M. Del Manso, M. Fabiani, M. F. Vescio, M. Spuri, D. Petrone, A. Bella, S. Iavicoli, M. Ajelli, S. Brusaferro, P. Pezzotti, and S. Merler. Impact of tiered restrictions on human activities and the epidemiology of the second wave of COVID-19 in Italy. Nature Communications, 12(1):4570, 2021. [impact factor: 14.919].
   Assessment of the impact of governmental restrictions against COVID-19 in Italy in the fall of 2020
4. V. Marziano, G. Guzzetta, B. M. Rondinone, F. Boccuni, F. Riccardo, A. Bella, P. Poletti, F. Trentini, P. Pezzotti, S. Brusaferro, G. Rezza, S. Iavicoli, M. Ajelli, and S. Merler. Retrospective analysis of the Italian exit strategy from COVID-19 lockdown. Proceedings of the National Academy of Sciences of the United States of America, 118(4): e2019617118, 2021. [impact factor: 11.205].
   Analysis of exit strategies from COVID-19 lockdown in Italy.
5. P. Poletti, M. Tirani, D. Cereda, G. Guzzetta, F. Trentini, V. Marziano, C. Toso, A. Piatti, R. Piccarreta, A. Melegaro, A. Andreassi, M. Gramegna, M. Ajelli, and S. Merler. Seroprevalence of and Risk Factors Associated With SARS-CoV-2 Infection in Health Care Workers During the Early COVID-19 Pandemic in Italy. JAMA Network Open, 4(7):e2115699, 2021. [impact factor: 8.483].
   Assessment of the association of different health-care categories and operational units (e.g., hospital wards) with odds of SARS-CoV-2 infection
6. P. Poletti, M. Tirani, D. Cereda, F. Trentini, G. Guzzetta, G. Sabatino, V. Marziano, A. Castrofino, F. Grosso, G. Del Castillo, R. Piccarreta, A. Andreassi, A. Melegaro, M. Gramegna, M. Ajelli, S. Merler, and ATS Lombardy COVID-19 Task Force. Association of Age With Likelihood of Developing Symptoms and Critical Disease Among Close Contacts Exposed to Patients With Confirmed SARS-CoV-2 Infection in Italy. JAMA Network Open, 4(3):e211085, 2021. [impact factor: 8.483].
   Assessment of the probability of developing symptoms and critical conditions after SARS-CoV-2 infection
7. P. Bosetti, P. Poletti, M. Stella, B. Lepri, S. Merler, and M. De Domenico. Heterogeneity in social and epidemiological factors determines the risk of measles outbreaks. Proceedings of the National Academy of Sciences of the United States of America, 117(48):30118–30125, 2020. [impact factor: 11.205].
   Investigation of the interplay between human mobility and heterogeneous vaccination coverage in the potential spatial spread of measles
8. F. Trentini, P. Poletti, S. Merler, and A. Melegaro. Measles immunity gaps and the progress towards elimination: a multi-country modelling analysis.

The Lancet Infectious Diseases, 17(10):1089–1097, 2017. [impact factor: 25.148].
Study of temporal changes in measles epidemiology across different socioeconomic settings, as a result of demographic changes and past immunisation policies

9. Q. Zhang, K. Sun, M. Chinazzi, A. Pastore Y Piontti, N. E. Dean, D. P. Rojas, S. Merler, D. Mistry, P. Poletti, L. Rossi, M. Bray, M. E. Halloran, I. M. Longini Jr, and A. Vespignani. Spread of Zika virus in the Americas. Proceedings of the National Academy of Sciences of the United States of America, 114(22):E4334–E4343, 2017. [impact factor: 9.504].
Study of the spatio-temporal spread of Zika at a continental level aimed at understanding the potential magnitude and timing of the observed epidemic
10. P. Poletti, S. Merler, M. Ajelli, P. Manfredi, P. K. Munywoki, D. Nokes, and A. Melegaro. Evaluating vaccination strategies for reducing infant respiratory syncytial virus infection in low-income settings. BMC Medicine, 13:49, 2015. [impact factor: 8.005].
Identification of population subgroups that should be targeted by vaccination, and with which schedule, to achieve an effective reduction of RSV infection rates in age groups at highest risk of severe disease

Trento, June 20, 2022