

Sara Sottile

Ph.D. student

Department of Mathematics
University of Trento
Via Sommarive 14, 38123 Povo - Trento, IT
☎ (+39) 0461 281701 - 1658
✉ sara.sottile@unitn.it
📁 sarasottile.github.io



Education

- Nov 2019 - Present **Ph.D. in Mathematics**, *University of Trento*, Trento, Italy.
Research fellowship in “mathematical models of epidemics”, Supervisor: Prof. Andrea Pugliese.
- Oct 2017 - Jul 2019 **M.Sc. in Mathematics (Modellistic Curriculum)**, *University of Turin*, Turin, Italy.
Thesis: “Epidemic Models: a Switch Control for Networks”
Supervisor: Prof. Lorenzo Fatibene, Co-supervisor: Prof. Xinzhi Liu, Grade: 110/110 cum Laude.
- Jan 2019 - Apr 2019 **M.Sc. in Applied Mathematics**, *University of Waterloo*, Waterloo, Ontario, Canada.
Exchange Program, GPA: 86/100.
- Sep 2014 - Oct 2017 **B.Sc. in Mathematics**, *University of Bari “A. Moro”*, Bari, Italy.
Thesis: “On Constitutive Equations in Thermodynamics”
Supervisor: Prof. Arcangelo Labianca, Grade: 107/110.
- Sep 2009 - Jul 2014 **Scientific High School Diploma**, *High School “A. Volta”*, Foggia, Italy.
Grade: 100/100.

Employment and Academic Positions

- Nov 2019 - Present **Ph.D. position**, *University of Trento*, Departments of Mathematics.
- Jan 2022 - Present **Research collaboration**, *Evidera*.
Collaboration for the project “Second cost-effectiveness model adaption for Spain”.
- Apr 2021 - Sep 2021 **Research collaboration**, *Astra Zeneca*.
Collaboration for the project “Valutazione economica dell’introduzione del vaccino antinfluenzale vivo attenuato (Fluenz Tetra®) nella popolazione giovanile italiana (2-6 anni)”.
- Nov - Dec 2018 **Administration activities**, *Research Area of School of Science of Nature*, Turin, Italy.
- Sep 29, 2017 **Scientific Entertainer**, *European Researchers’ Night 2017*, Bari, Italy.

Teaching experience

- Jan 2021 - Mar 2022 **Exams Supervisor**, *Department of Economics and Management*, University of Trento, Trento, Italy.
- Sep 2021 - Feb 2022 **Teaching assistant for the course Calculus I**, *Joint course for B.Sc. in Computer Science and B.Sc. in Information Engineering*, University of Trento, Trento, Italy.
Taught in English.
- Sep 2020 - Feb 2021 **Teaching assistant for the course Mathematical Modeling/Mathematical Biology**, *Joint course for M.Sc. in Mathematics, M.Sc. in Data science and M.Sc. in Quantitative and Computational Biology*, University of Trento, Trento, Italy.
Taught in English.

Mentoring

- Michela D’Amario *Parameters estimations for modelling the COVID-19 pandemic in Italy*, Master Thesis, University of Trento, graduated in May 2021.
- Claudio Meggio *A stochastic SEIR household model for COVID-19 epidemic including lockdown effects*, Master Thesis, University of Turin, graduated in June 2021.

Publications

- [1] **Ottaviano, S., Sensi, M. and Sottile, S.**, *Global stability of SAIRS epidemic models*, Nonlinear Analysis: Real World Applications, Vol. 26, (2022), pp. 103501.
<https://doi.org/10.1016/j.nonrwa.2021.103501>

- [2] **Boccalini, S. et al.**, *Health Technology Assessment (HTA) of the introduction of influenza vaccination for Italian children*, Journal of Preventive Medicine and Hygiene (2021), Vol. 62 (Issue 2 Suppl. 1), pp. E1-E128, <https://doi.org/10.15167/2421-4248/jpmh2021.62.2s1>.
Rizzo, C., Sottile, S. and Pugliese, A., Chapter 6: “*Valutazione economica dell'introduzione del vaccino antinfluenzale vivo attenuato (Fluenz Tetra®) nella popolazione giovanile italiana (2-6 anni)*”.
- [3] **Sottile, S. and Liu, X.**, *Time-varying epidemic transmission in heterogeneous networks and applications to measles*, Journal of Biological Systems, Vol. 28, No. 4 (2020), pp. 1-26.
<https://doi.org/10.1142/S0218339020500217>

Preprints

- [1] **Ottaviano, S., Sensi, M. and Sottile, S.**, *Global stability of multi-group SAIRS epidemic models*, 2022, Preprint.
<https://arxiv.org/pdf/2202.02993.pdf>
- [2] **Sottile, S., Kahramanoğulları, O. and Sensi, M.**, *How network properties and epidemic parameters influence stochastic SIR dynamics on scale-free random networks*, 2020, Preprint.
<https://arxiv.org/pdf/2011.10595.pdf>
- [3] **Pugliese, A. and Sottile, S.**, *Inferring the COVID-19 infection curve in Italy*, 2020, Preprint.
<https://arxiv.org/pdf/2004.09404.pdf>

Talks

- 8 April 2022 **Kick-off Meeting PRIN2020**, “*Global stability of SAIRS epidemic models*”, Invited Speaker.
Pavia (IT)
- 11 February 2022 **13th Conference on Dynamical Systems Applied to Biology and Natural Sciences - DSABNS**,
online “*Global stability of SAIRS epidemic models*”, Contributed Speaker.
- 7 February 2022 **Ph.D. Opening Day 2022 at University of Trento**, “*Global stability of SAIRS epidemic models*”,
online Invited Speaker.
- 10 June 2021 **Ph.D. Seminars at University of Groningen**, “*Time-varying epidemic transmission in heterogeneous networks*”, Invited Speaker.
online

Participations

- 7-8 Apr 2022 **Kick-off Meeting PRIN2020**.
Pavia (IT) Invited speaker
- 8-11 Feb 2022 **13th Conference on Dynamical Systems Applied to Biology and Natural Sciences - DSABNS**.
online Contributed speaker
- 5-10 Jul 2021 **Networks 2021: A Joint Sunbelt and NetSci Conference**.
online
- 2-5 Feb 2021 **12th Conference on Dynamical Systems Applied to Biology and Natural Sciences - DSABNS**.
online Presented a contributed abstract entitled “*Susceptibility pockets at the end of an epidemic may allow for subsequent epidemic outbreaks*”.
- 7-11 Dec 2020 **Conference on Complex Systems 2020 - CSS2020**, *Complex Systems Society*.
online
- 4 Dec 2020 **Warm-up for CSS2020**, *Young Researchers of the Complex Systems Society*.
online
- 18-20 May 2020 **Workshop Modeling the propagation of Covid-19**, *AMS, CNRS – EHESS*, Paris.
online
- 17-18 Feb 2020 **ISI Workshop on Learning, Algorithms and Networks**, *I.S.I. Foundation*, Turin.
Turin (IT)
- 4-7 Feb 2020 **11th Conference on Dynamical Systems Applied to Biology and Natural Sciences - DSABNS**.
Trento (IT) Presented a poster named “*Time-varying epidemic transmission in heterogeneous networks*”.

Schools

- 9 - 13 May 2022 **Summer School “Stochastic modelling in the life sciences”**, *Hausdorff Research Institute for Mathematics*, Bonn, Germany.
- 29 Nov - 1 Dec 2021 **Karlstad Autumn School “Interacting Particles meet Homogenization and Measure Theory”**,
online *Karlstad University*, Karlstad, Sweden.
- 30 Aug - 3 Sep 2021 **High-Performance Computing summer school 2021, Project M&S: Modelling and Simulation**,
Trento (IT) *University of Trento*, Trento, Italy.

Responsibilities

- Nov 2021 - Present **Member of the “Open Science Commission”,** *University of Trento.*
- Dec 2020 - Present **Elected representative of the Ph.D. students at the Department of Mathematics,** *University of Trento.*

Organization

- Sep 2020 - Present **Doc in Progress,** *University of Trento, Department of Mathematics.*
Periodic seminars organized at Department of Mathematics of University of Trento.
<https://docinprogressunitn.wordpress.com/>
- 7 Feb 2022 **PhD Opening Day 2022,** *University of Trento, Department of Mathematics.*
<https://webmagazine.unitn.it/en/evento/drmath/104217/phd-opening-2022>
- 11 Mar 2021 **PhD Opening Day 2021,** *University of Trento, Department of Mathematics.*
<https://webmagazine.unitn.it/en/evento/drmath/90585/phd-opening-2021>

Referee activity

- 2022 Journal of Mathematical Biology
- 2021 Journal of Biological Dynamics, Rendiconti del Circolo Matematico di Palermo Series 2

Awards

- Nov 2019 - Nov 2022 **Departments of Excellence Ph.D. Fellowship,** *University of Trento, Trento, Italy.*
Topic: Mathematical models of epidemics
- Dec 2020 **Scholarships for Events on Complex Systems (SECS),** *Young Researchers of the Complex Systems Society.*
<http://yrcss.cssociety.org/secs/>

Memberships

- Jan 2022 - Present **“GNAMPA” Indam,** *Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le loro Applicazioni.*
- Dec 2020 - Dec 2021 **Complex Systems Society.**

IT Skills

- Programming Python, R, MATLAB, C/C++, Maple, XPPAUT, HTML, Bash
- Operative Systems Windows, Linux
- Softwares LaTeX, Word, Excel, PowerPoint

Languages

- Mother tongue Italian
- Other languages English (B2), Spanish (A2)

Certificates

- Jun 2018 **English IELTS Academic,** Band Score 6.5 (CEFR Level B2).
- Jun 2009 **ECDL Certification,** European Computer Driving Licence.