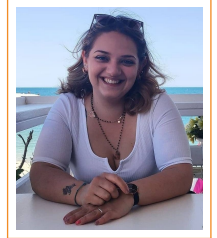


# Sara Sottile

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.
- 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.  
Bonn (DE)
- 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*.

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## 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>

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## Referee activity

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

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## 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/>

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## 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**.

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## IT Skills

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

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## Languages

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

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## Certificates

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