# University Academic Curriculum Vitae

**Personal information**

Name SARA BAGOSSI

**Present appointment**

- Junior researcher (RTD-A) in Mathematics Education
  At: Free University of Bozen, Faculty of Education.
  Supervisor: Prof. Giorgio Bolondi, (Free Univ. Bozen, Italy)

**Education since leaving school**

- 2022, Ph.D. in Mathematics
  Obtained: Università di Modena e Reggio Emilia in convention with Università degli Studi di Ferrara and Università degli Studi di Parma.
  Title of the dissertation: Second-order covariation: an analysis of students' reasonings and teacher's interventions when modelling real phenomena [MAT/04 – Mathematics Education]
  Retrievable from: https://iris.unimore.it/handle/11380/1265204
  Supervisor: Prof. Ferdinando Arzarello, (Univ. Torino, Italy).
  Co-supervisor: Prof. Maria Cristina Patria, (Univ. Ferrara, Italy).
- 2018, Master Degree in Mathematics (110/110 cum laude).
  Obtained: Università Cattolica del Sacro Cuore, Brescia.
  Title of the dissertation: A model for fibre-reinforced materials with statistical orientation of fibers applied to a pennate skeletal muscle tissue [MAT/07 – Mathematical Physics]
  Supervisor: Prof. Alessandro Musesti, (Univ. Cattolica, Italy).
  Co-supervisor: Prof. Giulia Giantesio, (Univ. Cattolica, Italy).
- 2016, Bachelor Degree in Mathematics (110/110 cum laude)
  Obtained: Università Cattolica del Sacro Cuore, Brescia.
  Title of the dissertation: An introduction to micropolar fluids [MAT/07 – Mathematical Physics]
  Supervisor: Prof. Giulia Giantesio, (Univ. Cattolica, Italy).

**Professional experience**

- 2023-2024, Post-doctorate in Mathematics Education
  At: Università di Torino, Department of Mathematics G. Peano.
  Title of the project: TransEET - Design and analysis of experimentation of interdisciplinary STEAM activities using emerging technologies
  Supervisor: Prof. Ornella Robutti, (Univ. Torino, Italy)
- 2022-2023, Post-doctorate in Mathematics Education
  At: Ben-Gurion University of the Negev, Faculty of Humanities and Social Sciences, Department of Science and Technology Education.
  Supervisor: Dr Osama Swidan, (Ben-Gurion Univ., Israel)
- Fellowship within Piano Lauree Scientifiche (PLS) - Mathematics for Università di Torino (2023-2024, 100 hours). Teacher educator for the teacher professional development program Scuole Secondarie Potenziate in Matematica – SSPM (Mathematics Enhanced Secondary Schools) at the University of Turin as part of the national project Liceo Matematico.
- Varia tu che covario anch'io, professional development course addressed to Italian teachers, promoted by Università degli Studi di Ferrara, in collaboration with: Prof. F. Arzarello, Dr F. Ferretti, Dr E. Taranto, Dr C. Giberti, Dr G. Lisarelli and Teacher S. Beltramino, online, 2021-2022.
- Realization of material for Massive Online Open Course (MOOC) on Physical-Mathematical Models administered by the University of Turin. The material was created in collaboration with Prof. F. Arzarello, S. Beltramino & K. Savioli, 2019-2020.
- Intensive summer courses of Mathematics and Physics for Liceo N. Copernico in Brescia (July 2021, 9 hours; July 2019, 20 hours).
- Tutor of Piano Lauree Scientifiche (PLS) - Mathematics for Università degli Studi di Ferrara (2020-2021, 40 hours; 2019 – 2020, 80 hours).

- Tutor of Piano Lauree Scientifiche (PLS) - Biology for Università degli Studi di Ferrara (2020-2021, 30 hours; 2019 – 2020, 40 hours).
- Mathematical trainings addressed to secondary school students in preparation for mathematical challenges, Università Cattolica del Sacro Cuore, Brescia (January 2020, January 2019).
- Tutor of Piano Lauree Scientifiche (PLS) for Università Cattolica del Sacro Cuore, Brescia (September 2017 – May 2018).

**Public engagement and school-career guidance**

- Tutor of Piano Lauree Scientifiche (PLS) for Università Cattolica del Sacro Cuore, Brescia
- School-career guidance at Liceo M. Curie (Pinerolo, TO), teacher S. Beltramino, 9th grade class (2023-24, 6 hours).
- Intervention at the vocational event "Laurea in tasca…e ora?" organized by InForMates (students' association) from Università Cattolica di Brescia (Brescia, Italy, March 9th, 2024).
- Interactive exhibition "Learning with Augmented Reality" organized by the Department of Science and Technology Education in collaboration with the Central Library of Ben-Gurion University (Ben-Gurion University, Israel, June 14th, 2023).
- Pre-university orientation course addressed to students interested in Mathematics Degree (online, Università Cattolica di Brescia, December 1st, 2020).
- Presenter of the laboratory "Covariazione nella modellizzazione di fenomeni [Covariation in the modelling of real phenomena]" for the Stage in Mathematics held at Università di Ferrara (Ferrara, June 11th, 2021; June 12th, 2020).
- Presenter of the laboratory "L'altra faccia della geometria: laboratorio sulle sfere di Lénárt [The other side of geometry: laboratory on Lénárt's spheres]" for the Stage in Mathematics held at Università degli Studi di Ferrara (Ferrara, June 12th, 2019).
- Presenter of the laboratory "Penna, carta, forbici e… Solidi regolari! [Pen, paper, scissors and... regular solids!]" for HowIMetScience! 2019 (Ferrara, May 18th, 2019).
- MEETmeTONIGHT (September 2017, September 2018): Theme days devoted to maths and physics during which Università Cattolica di Brescia is open to the public and several thematic stands are set up. Some of the main activities proposed are related to Zometool, soap film, non-newtonian fluids and tessellations.
- Service Learning (May 2018): Pilot project of volunteering in collaboration with Università Cattolica and Spedali Civili of Brescia; this project of volunteering was addressed to children of the middle and high school admitted for eating or psychological disorders in the neuropsychiatry unit and cancer in the oncology unit. These laboratories focused on mathematical topics like platonic solids and statistical main concepts. The purpose was to reveal the funny side of math through interactive and practical activities.
- Mathematical Challenges (March 2017, March 2018): Cooperation in the organization of mathematical challenge addressed to children of the secondary school.

**Experience in academic teaching**

- Teacher for the course "Elementary Mathematics", Degree in Primary Education Science, Università Cattolica di Piacenza, a.y. 2024-2025 (60 hours).
- Teaching classes for the Initial Training Course (Percorso Formazione Iniziale – PFI) for secondary school teachers. The course was entitled "Metodi e strategie didattiche per l'insegnamento della Matematica I" [Teaching methods and strategies for teaching Mathematics I], Università Cattolica di Brescia and Piacenza, August 2024 (12 hours).
- Teaching classes for the Ph.D. course entitled "Embodiment, Discourse and Technology in Mathematics Education Research", University of Ferrara, a.y. 2023-2024 (4 hours).

**Other academic responsibilities**

- Member of the Council of Mathematics Department (Consiglio di Dipartimento di Matematica) of the University of Turin (since March 2024) as a representative of temporary afferents.

**Memberships**

- Member of the International Group for the Psychology of Mathematics Education (IGPME), since 2021.
- Member of European Society for Research in Mathematics Education (ERME), since 2022.
- Member of Gruppo Nazionale per le Strutture Algebriche, Geometriche e le loro Applicazioni (GNSAGA), INdAM, since 2020.
- Member of Associazione Italiana di Ricerca in Didattica della Matematica (AIRDM), since 2019.

**Research and scholarships**

- Participation in the activities of the research group in Mathematics Education at the University of Turin (since 2023) and collaboration with it in conferences, seminars, theoretical and empirical research, and teacher training activities (Referent: Prof. O. Robutti). Website of the research group: https://www.dipmatematica.unito.it/do/gruppi.pl/Show?_id=m8gu
- Member (with scholarship), as a researcher in Mathematics Education from the University of Turin, of the TransEET project – Transforming Education with Emerging Technology (since 2023). The project aims at shaping the use of existing and emerging technologies, for dynamic educational transformation aiming to meet the needs of the 21st century. The project is led by the National and Kapodistrian University of Athens, and in addition to the University of Turin, it involves three other partner universities: Johannes Kepler University Linz, University College of London, and Amsterdam University of Applied Sciences. Website of the project: https://transeet.eu/
- Member, as a researcher in Mathematics Education from the University of Turin, of the STEAM-Connect project (2023-2024). The project focuses on new innovative methods for STEAM education and, through this, initiates the acquisition of new skills and competencies for both teachers and students. The goal is to co-create transdisciplinary STEM-to-STEAM pedagogical innovations through connecting international learning communities. The project is led by the University of Luxembourg and in addition to University of Turin it involves the Johannes Kepler University Linz, Experience Workshop (Finland), and Comenius University of Bratislava. Website of the project: https://steamconnect.education/
- Member (with scholarship), as a researcher in Mathematics Education, of the AR4MATH project (2022-2024). The AR4MATH project considers the application of augmented reality (AR) technology for developing mathematical reasoning, and also aims to show the general potentialities of AR technology and give some hint of the theoretical principles behind them. Other members of the research group are Dr O. Swidan, Prof. M. N. Fried, O. Abu Asbe, and O. Jaber (Ben-Gurion University). International collaboratives are Prof. C. Sabena (University of Turin), Dr C. Soldano (University of Turin), and Prof. F. Schacht (University of Duisburg-Essen).
- Member, as a researcher in Mathematics Education, of the project “Fostering mathematical discussion beyond the borders” funded by the International Group for the Psychology of Mathematics Education (IGPME), Special Projects 2023. The project investigates the potentialities of a digital tool called Padlet to promote new forms of mathematical discussion promoting the participation and inclusion of all the students. This project involves researchers in Mathematics Education and school mathematics teachers from four different countries (Argentina, Canada, Israel, and Italy). Some of the members of the project are: Dr C. Giberti (University of Bergamo, PI), Prof. G. Bolondi (Free University of Bozen), Prof. D. Wagner (University of New Brunswick, Canada), Prof. M. E. Villareal (Universidad Nacional de Córdoba, Argentina).
- Principal investigator, as a researcher in Mathematics Education, of the project “Investigating second-order covariation with eye-tracking” since 2022. The project aims at identifying and characterizing cognitive processes involved in

reasoning covariationally about graphical representations of functional relationships. Other members of the project are: Prof. M. Vollstedt (Bremen University), A. Thomaneck (Bremen University), Dr O. Swidan (Ben-Gurion University), Y. Vaknin (Ben-Gurion University).

- Member, as a researcher in Mathematics Education, of MaT&L Research Group – Mathematics Teaching and Learning Research Group (since 2022) based at the Department of Mathematics and Computer Science, University of Ferrara. The research group is currently focused on studying the role of covariational reasoning in the teaching and learning processes of mathematics focusing on the Italian educational paramount. Other members of the research group are Prof. F. Arzarello, teacher S. Beltramino, Dr F. Ferretti, Dr C. Giberti, Dr E. Taranto, & Dr C. Soldano. Website of the group: MaT&L Research Group

**Publications**

- Books – Authored
  1. *Bagossi, S.,* Beltramino, S., Ferretti, F., Giberti, C., & Taranto, E. (2023). Varia tu che covario anch'io. Riflessioni e progettazioni sul ragionamento covariazionale [You vary and I covary too: Insights and educational projects on covariational reasoning]. Ledizioni. https://doi.org/10.5281/zenodo.7797424
- Conference papers
  2. Taranto, E., *Bagossi, S.,* Ferretti, F., & Arzarello, F. (2024). Italian teachers' beliefs on covariational reasoning: an exploratory study. LUMAT-B: International Journal on Math, Science and Technology Education, 9(2). https://journals.helsinki.fi/lumatb/article/view/2480
  3. *Bagossi, S.,* Swidan, O., & Abu Asbe, O. (expected in 2024). Feeling the slope: learning the derivative concept with augmented reality. Proceedings of the 16th International Conference on Technology in Mathematics Teaching (ICTMT 16).
  4. Lemmo, A., *Bagossi, S.,* Cazzaniga, P., Giberti, C., Taranto, E., & Swidan, O. (2024). Orchestrating productive mathematical discussions with and through Padlet. In E. Faggiano, A. Clark-Wilson, M. Tabach, & H.-G. Weigand (Eds.), Proceedings of the 13th ERME Topic Conference Mathematics Education in the Digital Age 4 (MEDA4), 247–254.
  5. *Bagossi, S.,* Soldano, C., Taranto, E., & Viola, G. (2024). Prompting embodied instrumented covariation with the digital Tracer. In E. Faggiano, A. Clark-Wilson, M. Tabach, & H.-G. Weigand (Eds.), Proceedings of the 13th ERME Topic Conference Mathematics Education in the Digital Age 4 (MEDA4), 25–32.
  6. *Bagossi, S.,* & Taranto, E. (2023). Disclosing parametric functions in the transition from pen-and-paper to GeoGebra. In P. Drijvers, C. Csapodi, H. Palmér, K. Gosztonyi, & E. Kónya (Eds.), Proceedings of the Thirteenth Congress of the European Society for Research in Mathematics Education (CERME13) (pp. 2859–2866). Alfréd Rényi Institute of Mathematics and ERME.
  7. *Bagossi, S.,* Taranto, E., Beltramino, S., & Arzarello, F. (2023). Conoscenze e convinzioni degli insegnanti in merito alla covariazione [Teachers' knowledge and beliefs about covariation]. In M. Asenova & B. D'Amore (Eds.), Atti del Convegno Nazionale "Incontri con la Matematica" nr. 37, 10-12 novembre 2023, Castel San Pietro Terme (BO) (pp. 135–136). Bonomo.
  8. *Bagossi, S.,* Kovarsky Boev, Y., & Swidan, O. (2023). Meaning-making through questioning in an augmented reality environment. In M. Ayalon, B. Koichu, R. Leikin, L. Rubel & M. Tabach (Eds.). Proceedings of the 46th Conference of the International Group for the Psychology of Mathematics Education (Vol. 2, pp. 75–82). PME 46.
  9. *Bagossi, S.,* Capone, R., & Mennuni, F. (2023). Undergraduate students' second-order covariational reasoning when conceptualizing paraboloids supported by digital tools. In M. Ayalon, B. Koichu, R. Leikin, L. Rubel & M. Tabach (Eds.). Proceedings of the 46th Conference of the International Group for the Psychology of Mathematics Education (Vol. 2, pp. 67–74). PME 46.
  10. *Bagossi, S.,* & Arzarello, F. (2023). Instrumented covariation under two theoretical lenses. In C. Derouet, A. Nechache, P.R. Richard, L. Vivier,

I.M. Gómez-Chacón, A. Kuzniak, M. Maschietto & E. Montoya Delgadillo (Eds.), Actes du septième symposium d'Étude sur le Travail Mathématique (ETM7) (pp. 345–356). IREM de Strasbourg.

11. *Bagossi, S.,* Shifrin, N., Jaber, O., & Swidan, O. (2022). Interactions and meaning-making in an AR learning environment. In H-G. Weigand, A. Donevska-Todorova, E. Faggiano, P. Iannone, J. Medová, M. Tabach, & M. Turgut (Eds.), Proceedings of the 13th ERME Topic Conference Mathematics Education in Digital Age 3, 51–55. Available at: https://hal.science/hal-03925304/document
12. Jaber, O., *Bagossi, S.,* & Swidan, O. (2022). Augmented reality for conceptualizing covariation through connecting virtual and real worlds. In H-G. Weigand, A. Donevska-Todorova, E. Faggiano, P. Iannone, J. Medová, M. Tabach, & M. Turgut (Eds.), Proceedings of the 13th ERME Topic Conference Mathematics Education in Digital Age 3, 182–187. Available at: https://hal.science/hal-03925304/document
13. *Bagossi, S.* (2022). Second-order covariation: it is all about standpoints. In J. Hodgen, E. Geraniou, G. Bolondi & F. Ferretti (Eds.), Proceedings of the Twelfth Congress of European Research in Mathematics Education (CERME12) (pp. 4228–4235). Free University of Bozen-Bolzano and ERME. Available at: https://hal.science/hal-03765022/document
14. *Bagossi, S.* (2022). Conceptual blending unravels covariation. In C. Fernández, S. Llinares, A. Gutiérrez, & N. Planas (Eds.), Proceedings of the 45th Conference of the International Group for the Psychology of Mathematics Education (Vol. 4, p. 173). PME. Available at: https://rua.ua.es/dspace/bitstream/10045/126724/1/proceedings-pme45-vol4-029.pdf
15. *Bagossi, S.* (2021). Valutare la conoscenza concettuale con il Comparative Judgement [Assessing conceptual understanding with Comparative Judgement]. In B. D'Amore (Ed.), Atti del Convegno Nazionale "Incontri con la matematica" XXXV (pp. 173–174). Bologna: Pitagora.
16. *Bagossi, S.* (2021, April 9th). Toward second order covariation: Comparing two case studies on the modelling of a physical phenomenon. Paper presented at the 2021 annual meeting of the American Educational Research Association. Retrieved 26/07/2023, from the AERA Online Paper Repository. https://doi.org/10.3102/1688398
17. *Bagossi, S.* (2019). Un approccio visuale alla regolarità in geometria solida [A visual approach to regularity in geometry], L'insegnamento della matematica e delle scienze integrate, Atti del XLVIII Seminario Nazionale, Vol. 42 A-B, 721–722.

- Journal articles in refereed academic journals

18. Ferretti, F., Giberti, C., *Bagossi, S.,* Taranto, E., & Arzarello, F. (expected in November 2024). Embodied instrumented covariation: a case study from primary school with the Tracer. For The Learning of Mathematics.
19. *Bagossi, S.* (2024). Second-order covariation: enlarging the theoretical framework of covariational reasoning. Mathematical Thinking and Learning, 1–22. https://doi.org/10.1080/10986065.2024.2393889
20. Jaber, O., *Bagossi, S.,* Fried, M.N., & Swidan, O. (2024) Conceptualizing functional relationships in an augmented reality environment: connecting real and virtual worlds. ZDM Mathematics Education. https://doi.org/10.1007/s11858-024-01594-8
21. *Bagossi, S.* (2024). Engaging in covariational reasoning when modelling a real phenomenon: the case of the psychrometric chart. Bollettino dell'Unione Matematica Italiana, 17(2), 199–220. https://doi.org/10.1007/s40574-023-00375-7
22. *Bagossi, S.,* & Swidan, O. (2023). Learning Second-order Covariation with GeoGebra and Augmented Reality. International Journal for Technology in Mathematics Education, 30(4), 213–218. https://doi.org/10.1564/tme_v30.4.2
23. *Bagossi, S.,* Swidan, O., & Arzarello, F. (2022). Timeline tool for analyzing the relationship between students-teachers-artifacts

interactions and meaning-making. Journal on Mathematics Education, 13(2), 357–382. https://doi.org/10.22342/jme.v13i2.pp357-382

24. *Bagossi, S.,* Ferretti, F., & Arzarello, F. (2022). Assessing covariation as a form of conceptual understanding through comparative judgement. Educational Studies in Mathematics, 111(3), 469–492. https://doi.org/10.1007/s10649-022-10178-w
25. Swidan, O., *Bagossi, S.,* Beltramino, S. & Arzarello, F. (2022). Adaptive instruction strategies to foster covariational reasoning in a digital rich environment. The Journal of Mathematical Behavior, 66, 100961. https://doi.org/10.1016/j.jmathb.2022.100961

- Journal articles in non-indexed or professional journals
  26. *Bagossi, S.*, Giberti, C., Beltramino, S., & Fraschetti, C. (2024). Promuovere la discussione matematica attraverso Padlet. Nuova Secondaria, 9, 280–286.
  27. *Bagossi, S.,* Giberti, C., Lemmo, A., & Taranto, E. (2024). Il supporto della piattaforma digitale Padlet. Una nuova prospettiva per la discussione matematica in classe [The support of the digital platform Padlet. A new perspective for mathematical discussion in the classroom]. Essere A Scuola, 8, 27–30.
  28. Asenova, M., *Bagossi, S.,* & Arzarello, F. (2023). A categorical definition of second order covariation. Epistemological and didactical aspects. Caminhos da Educação Matemática em Revista (Online), 13(2), 11–32. https://periodicos.ifs.edu.br/periodicos/caminhos_da_educacao_matematica/article/view/1551/1504
  29. *Bagossi, S.* (2021). Variabili e parametri: un'analogia informatica [Variables and parameters: a computer science analogy], L'insegnamento della matematica e delle scienze integrate, Vol. 44 B, 74–88.
- Conference abstract
  30. *Bagossi, S.,* Nikolaou, MS., & Beltramino, S. (2024). Empowering students as game designers: a case study on triangle classification. Book of abstract of the Game-based and playful Approaches to Mathematics Education (GAME) conference, 11–14. Available at: Book of abstract
  31. *Bagossi, S.,* Giberti, C., Cazzaniga, P., Beltramino, S., Taranto, E., & Lemmo, A. (2024). The use of Padlet to overcome national borders in the mathematical discussion. In N. Bianquin, & F. Magni (Eds.), Book of abstract ATEE Spring Conference 2024 (p. 213). Available at: https://drive.google.com/file/d/1CKuGXZPU-ZnQgnzFGP-6o_5K22u5gaNI/view
  32. *Bagossi, S.,* Beltramino, S., & Taranto, E. (2022). Variabili e parametri: voci di studenti e insegnanti a confronto. In B. Di Paola (Ed.), Atti delle Giornate di Studio dell'Insegnante di Matematica (GIMat) - Le mani, la parola, la testa: capire, argomentare, dimostrare in matematica, Quaderni di Ricerca in Didattica (Mathematics), 10(1), 57–59. Palermo, Italy: G.R.I.M., Dipartimento di Matematica e Applicazioni. Available at: https://sites.unipa.it/grim/quaderno_2022_numspec_10.htm
- Posters
  33. Colangelo, M., & *Bagossi, S.* (2024). Using Mixed reality applications for learning Math. In N. Bianquin, & F. Magni (Eds.), Book of abstract ATEE Spring Conference 2024 (p. 351). Poster available at: https://doi.org/10.5281/zenodo.11519047
  34. *Bagossi, S.,* Jaber, O., & Abu Asbe, O. (2023). Augmented Reality for Learning Math. Poster for the interactive exhibition "Learning with Augmented Reality". http://dx.doi.org/10.13140/RG.2.2.14156.80001
  35. *Bagossi, S.* (2021). Virtual poster for the paper presented during AERA 2021. https://aera21-aera.ipostersessions.com/default.aspx?s=06-45-F8-63-66-83-57-71-3D-00-B6-47-E5-9F-1E-55#

**Further data**

- Talks as invited speaker
  36. Arzarello, F., & *Bagossi, S*. (2024, April 17th). Strumenti e corpo nell'apprendimento della matematica [Tools and body in the learning of

mathematics], Ciclo di seminari di formazione di didattica della matematica, University of Ferrara, Italy.

37. *Bagossi, S.* (2023, December 20th). Highlights from research on learning calculus concepts with augmented reality, XMaths workshop, University of Bari, Italy.
38. *Bagossi, S.* (2023, December 14th). Apprendere la matematica con la realtà aumentata: tra sfide e realtà [Learning Math with augmented reality: challenges and reality], Mathesis Subalpina, Turin, Italy.
39. *Bagossi, S.* (2023, October 31st). Esplorare il ragionamento covariazionale con il tracciatore [Exploring covariational reasoning with the Tracer]. University of Ferrara, Italy.

- Talks

40. *Bagossi, S.,* Robutti, O., & Sabena, C. (2024, April 23rd). On the creation of technological prototypes for the teaching and learning of mathematics: theoretical and methodological insights from the TransEET project, CIEAEM 75 – Informal meeting, University of Turin.
41. Silvestri, L., *Bagossi, S.,* Robutti, O., Pocalana, G., & Mondino, W. (2024, April 23rd). Insights on the design and implementation of STEAM activities within the STEAM-Connect project, CIEAEM 75 – Informal meeting, University of Turin.
42. Pocalana, G., *Bagossi, S.,* Colangelo, M., Robutti, O., Soldano, O., Bautista, G., & Bouwer, A. (2023, November 4th). Developing Augmented and Virtual Reality prototypes for Mathematics Education within the TransEET project, Second International Symposium on Augmented and Virtual Reality in Mathematics Education, online.
43. *Bagossi, S.,* Swidan, O., & Abu Asbe, O. (2023, November 3rd). Touch the derivative: Design and learning considerations for an Augmented Reality learning environment, Second International Symposium on Augmented and Virtual Reality in Mathematics Education, online.
44. *Bagossi, S.,* Giberti, C., Arzarello, A., Bolondi, G., Beltramino, S., & Fraschetti, C. (2023, September 29th). Promuovere la discussione matematica attraverso il Padlet, Scuola e istruzione superiore in dialogo.
45. *Bagossi, S.,* Swidan, O., & Mousa, K. (2023, September 13th). Emerging orders of covariational reasoning in a digital learning environment, Computer Algebra and Dynamic Geometry in Mathematics Education (CADGME 2023), Catania.
46. *Bagossi, S.* (2023). C'era una volta una tesi sulla covariazione al secondo ordine. Riflessioni sparse un anno e mezzo dopo [Once upon a time, there was a thesis on second-order covariation. Scattered reflections one year and a half later]. Talk for the cycle "Ph.D. webinar" organized by AIRDM. Reactor: Prof. Samuele Antonini.
47. Arzarello, F., Bolondi, G., Giberti, C., Wagner, D., *Bagossi, S.,* & Lemmo, A. (2023, April 15th). Fostering mathematical discussion beyond the borders. ICDME—Tsukuba Conference 2023.
48. *Bagossi, S.* (2023, January 11th). Qualitative methods in Mathematics Education. Invited by Dr Osama Swidan (BGU).
49. *Bagossi, S.,* Beltramino, S., & Taranto, E. (2022, November 18th). Variabili e parametri: voci di studenti e insegnanti a confronto [Variables and parameters: students and teachers' voices compared], Giornate dell'Insegnante di Matematica – GIMat.
50. *Bagossi, S.,* Jaber, O., & Swidan, O. (2022, September 13th). Learning Second-Order Covariation with GeoGebra and Augmented Reality. Computer Algebra and Dynamic Geometry in Mathematics Education (CADGME 2022), Jerusalem.
51. *Bagossi, S.,* & Arzarello, F. (2022, June 28th). Instrumented covariation under two theoretical lenses, Seventh Symposium on the Study on Mathematical Work, online.
52. *Bagossi, S.* (2022, May 27th). Second-order covariation: an analysis of students' forms of reasoning and teacher's interventions when modelling real phenomena, First UMI Meeting of Ph.D. Students, Padova.
53. *Bagossi, S.* (2022, April 26th). Embodied cognition and multimodality. Invited by Dr Osama Swidan (BGU).

54. *Bagossi, S.* (2022, April 11th). Covariation: new orders and fresh approaches. Invited by Prof. Cristina Sabena and Ornella Robutti (Univ. Turin).
55. *Bagossi, S.* (2022, April 6th). Using digital tools for math learning: investigating second-order covariation. Invited by Dr Elon Langbeheim (BGU).
56. *Bagossi, S.* (2022, February 2nd-5th). Second-order covariation: it is all about standpoint, Twelfth Congress of the European Society for Research in Mathematics Education, online, February 4th, 2022.
57. *Bagossi, S.* (2021, October 6th). Raccontare i processi di insegnamento-apprendimento del ragionamento covariazionale nella modellizzazione di fenomeni reali [The teaching-learning processes of covariational reasoning in the modelling of real phenomena], Initiative "Dottorandi in Ateneo", Ateneo di Brescia.
58. *Bagossi, S.* (2020, May 25th). La nozione di co-variazione: Dalla teoria alla pratica in aula [The notion of covariation: from theory to classroom practice], Mathesis Ferrara, online.

- Workshops

59. *Bagossi, S.* (2024, September 27th). Trasformarsi in game designer per riflettere sulla classificazione di forme geometriche. XXXVII Convegno UMI-CIIM.
60. *Bagossi, S.,* & Swidan. O. (2024, June 19th). Exploring orders of covariational reasoning in digital environments. 2nd International Conference on Math Education and Technology 2024 (ICMET 2024). University of Aveiro, Portugal.
61. Colangelo, M., Robutti, O., Yang, Y., Karavakou, M., Ghersi, A., & *Bagossi, S.* (2024, June 21st). Prototypes with Transformative Technologies for STEAM Education. 2nd International Conference on Math Education and Technology 2024 (ICMET 2024). University of Aveiro, Portugal.
62. Swidan, O., & *Bagossi, S.* (2024, April 18th). Drops of covariation. MaT&L Inaugural event, University of Ferrara.
63. *Bagossi, S.,* Ferretti, F., Soldano, C., & Taranto, E. (2023, October 11th). Esplorare la covariazione con il tracciatore fisico e digitale [Exploring covariation with the physical and digital Tracer], DIFIMA 2023.
64. Abu Asbe, O., & *Bagossi, S.* (2023, May 17th). Experiencing augmented reality and discussing covariational design, Workshop on covariation 2023.

**Language competence**
Italian – mother-tongue
English – C1

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