

SARA BAGOSSI

Curriculum vitae et studiorum

- PERSONAL INFORMATION

Name and surname: Sara Bagossi

- EDUCATION AND TRAINING

- **Ph.D. in Mathematics** (final defense in February 2022)
Title of the thesis: Second order covariation in the modelling of real phenomena [provisional] [MAT/04]
Supervisor: Prof. Ferdinando Arzarello, (Univ. Torino).
Co-supervisor: Prof. Maria Cristina Patria, (Univ. Ferrara).
- **Master Degree in Mathematics** (110/110 cum laude).
Obtained: Università Cattolica del Sacro Cuore, Brescia, September 27th, 2018.
Title of the thesis: A model for fibre-reinforced materials with statistical orientation of fibers applied to a pennate skeletal muscle tissue.
Supervisor: Prof. Alessandro Musesti, (Univ. Cattolica).
Cosupervisor: Prof. Giulia Giantesio, (Univ. Cattolica).
- **Bachelor Degree in Mathematics** (110/110 cum laude)
Obtained: Università Cattolica del Sacro Cuore, Brescia, July 4th, 2016.
Title of the thesis: An introduction to micropolar fluids.
Supervisor: Prof. Giulia Giantesio, (Univ. Cattolica).
- **Upper secondary school diploma** (100 cum laude).
Obtained: Liceo scientifico N. Copernico, Brescia.

- ATTENDED COURSES, WORKSHOPS AND SCHOOLS

- Convegno Nazionale Incontri con la Matematica n. 34 (online, November 6th – 8th 2020, 15 hours)
- Utrecht Summer School, participation and presentation of an online pitch (online, August 26th -27th 2020)
- Theory of Objectification (Workshop online, Libera Università di Bolzano, May 27th – June 10th 2020, 25 hours)
- YESS-10 Summer School (online, April 2020).
- XXXVII Seminario Nazionale AIRDM (Rimini, January 2020).
- XXI Congresso UMI (Pavia, September 2019).
- IV Summer school of AIRDM (Pavia, June 2019).
- XXXVI Seminario Nazionale AIRDM (Rimini, January 2019).
- Congresso Nazionale Mathesis (Milano, November 2018).
- Summer School of Mathematical Physics (INDAM, Ravello, September 2017) with the presentation of an internal dissertation titled “The mechanical behavior of myocardium”.
- Maths from the body, international workshop (Università Cattolica di Brescia, May 2017).

- OTHER EDUCATIONAL EXPERIENCES

- Support math teacher in the secondary school Jesus El Maestro in Santiago del Estero (Argentina, August 2016 - September 2016).
- Stage at the upper secondary school Liceo scientifico N. Copernico (Brescia) consisting of teaching math, physics and taking part to the lessons under the supervision of prof. Laura Olian Fannio (30 hours, 2016).

- GRANTS

- Grant offered by the Program for Science and Technology Education of Ben Gurion University (Israel) to attend the seminar entitled *Augmented Reality in Teaching and Learning Mathematics* (November 17th-23rd, 2019).

- PUBLICATIONS

- Bagossi, S. (2019). Un approccio visuale alla regolarità in geometria solida, *L'insegnamento della matematica e delle scienze integrate*, Atti del XLVIII Seminario Nazionale, Vol. 42 A-B, 721-722.
- Bagossi, S., (2021) Variabili e parametri: un'analogia informatica, *L'insegnamento della matematica e delle scienze integrate*, Vol. 44 B, 74-88.

- GIVEN COMUNICATIONS

- "La nozione di co-variazione: Dalla teoria alla pratica in aula", Mathesis section Ferrara, online, May 25th, 2020.
- "Un approccio visuale alla regolarità in geometria solida", XLVIII Seminario Nazionale del CRD U. Morin, *Esplorare, raccontare, argomentare, dimostrare. Riflessioni e proposte didattiche per l'insegnamento della matematica in geometria solida* (Paderno del Grappa, Italy), August 21st, 2019.
- "Toward second order covariation: Comparing two case studies on the modelling of a physical phenomenon", Individual presentation at *2021 Virtual AERA Annual Meeting*, April 9th, 2021.

- WORKS IN PREPARATION

- Swidan, O., Bagossi, S., Beltramino, S. & Arzarello, F., Adaptive instruction strategies to foster covariational reasoning in a digital rich environment, *Journal of Mathematical Behavior*, submitted.

- AFFILIATIONS

- Member of Associazione Italiana di Ricerca in Didattica della Matematica (AIRDM), since 2019.
- Member of Mathesis – section Ferrara, since 2019.
- Member of Gruppo Nazionale per le Strutture Algebriche, Geometriche e le loro Applicazioni (GNSAGA), since 2020.

- TEACHING ACTIVITY: EXERCISE COURSES AT UNIVERSITY

- "Institutions of mathematics", Bachelor Degree in Computer Science, Università degli Studi di Ferrara, 2020-2021.

- "Introduction to mathematical analysis II", Bachelor Degree in Electronic and IT Degree, Università degli Studi di Ferrara, 2020-2021, 2019-2020
 - "Mathematics Education", Bachelor Degree in Mathematics, Università degli Studi di Ferrara, 2020-2021, 2019-2020.
 - Seminar of "Tensor Calculus" for the course "Fisica Matematica I", Master Degree in Mathematics, Università degli Studi di Ferrara, 2020-2021, 2019-2020.
- CO-SUPERVISOR OF BACHELOR DEGREE THESIS
 - Simone Chiarelli. "Esplorare la geometria sferica: un laboratorio matematico con la sfera di Lénárt", 2018-19.
- WORKING EXPERIENCES
 - Tutor of Piano Lauree Scientifiche (PLS) - Mathematics for Università di Ferrara (2020-2021, 40 hours; 2019 – 2020, 80 hours).
 - Tutor of Piano Lauree Scientifiche (PLS) - Biology for Università di Ferrara (2020-21, 30 hours; 2019 – 2020, 40 hours).
 - Mathematical trainings addressed to secondary school students in preparation to mathematical challenges, Università Cattolica del Sacro Cuore, Brescia (December 2019 - January 2020).
 - Intensive summer courses of Mathematics and Physics for Liceo N. Copernico in Brescia (July 2019, 20 hours).
 - Mathematical trainings addressed to secondary school students in preparation to 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).
 - Activity of tutoring addressed to Bachelor Degree students of Università Cattolica del Sacro Cuore, Brescia (May 2018- August 2018).
 - Part-time employment in the library of Università Cattolica del Sacro Cuore, Brescia (April 2016-July 2016, April 2017-March 2018).
- POPULARIZATION ACTIVITIES
 - Pre-university orientation course addressed to students interested in Mathematics Degree (online, Università Cattolica di Brescia, December 1st, 2020).
 - Presenter of the laboratory "Covariatione nella modellizzazione di fenomeni" for the Stage in Mathematics held at Università di Ferrara (Ferrara, June 12th, 2020).
 - Presenter of the laboratory "L'altra faccia della geometria: laboratorio sulle sfere di Lénárt" for the Stage in Mathematics held at Università di Ferrara (Ferrara, June 12th, 2019).
 - Presenter of the laboratory "Penna, carta, forbici e... Solidi regolari!" 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 maths 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.

- LANGUAGE SKILLS

- Italian: mother tongue.
- English: B2 level.
- French: reading only.
- Spanish: reading only.

- COMPUTER LANGUAGES and OPERATING SYSTEMS

Microsoft Office Suite, Mac OS, LaTeX.

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Brescia, June 3rd, 2021.