CURRICULUM OF ORNELLA ROBUTTI

UNIVERSITY OF TURIN – DEPARTMENT OF MATHEMATICS

INSTRUCTION:
- 1989 University of Turin, Degree in Physics (110/110 cum laude)
- 1984 University of Turin, Degree in Mathematics (110/110 cum laude)
- 1980 Liceo scientifico Arimondi - high school, Savigliano (60/60)

WINNER OF:
- 2021 Aspiring Commissioner eligible for "National Scientific Qualification" in the competition sector 01/A1;
- 2020 "National Scientific Qualification" for 1st level Professor in the 01/A1 sector (2018-2020 round, III);
- 2012 “National scientific qualification” for 1st level Professor in the 01/A1 sector (2012 round);
- 2003 Associate Professor in MAT/04, University of Turin
- 1999 Researcher in MAT/04, University of Turin
- 1989 National selection for teacher trainers in the National Plan for Information Technology (PNI), Ministry of Education;
- 1986 n.3 “Qualification in schools” for SECONDARY SCHOOL TEACHER: Mathematics and Physics; Mathematics; Applied mathematics, Ministry of Education.
- 1985 “Qualification in schools” for MIDDLE SCHOOL TEACHER Mathematical, physical, chemical and natural sciences, Ministry of Education.

ACADEMIC AND PROFESSIONAL POSITIONS:
- 2021-present University of Turin: FULL PROFESSOR in Mathematics Education (MAT04)
- 2004-21 University of Turin: ASSOCIATE PROFESSOR in Mathematics Education (MAT04)
- 1999-04 University of Turin: RESEARCHER in Mathematics Education (MAT04)
- 1989-99 National Plan for Information Technology: TEACHER TRAINER - MPI
- 1986-99 Secondary school, Turin: TEACHER in mathematics and physics - MPI
- 1984-86 Secondary school, Savigliano: pre-role TEACHER - MPI

PARTICIPATION TO NATIONALS SCIENTIFIC COMMISSIONS OF INSTITUTIONAL TYPE:
- 2023-present for "National Scientific Qualification" Commission
- 2021-2023 Board of the UMI Group of mathematical high schools
- 2012-2022 UMI-CIIM National commission for the teaching of mathematics of the UMI: a total of three mandates (http://www.umi-ciim.it/che-cose-la-ciim/composizione-della-ciim/)
- 2001-04 Commission for the national curriculum in primary and secondary school mathematics UMI-CIIM
- 2000-present Mathesis Subalpina Board of Directors http://www.mathesistorino.it/

INSTITUTIONAL POSITIONS IN THE UNITO UNIVERSITY:
CHARGES:
- 2023-present CIFIS: DIRECTOR of 60 CFU courses
- 2022-present REPRESENTATIVE of the Department of Mathematics in the UNITO MINDtheGEPs project
- 2021-2023 Department of Mathematics: HEAD of Public Engagement
- 2012-present Department of Mathematics: HEAD OF the Scientific Degree Plan
- 2012-2016 University of Turin: COORDINATOR of the School of Science Commission for the TFA teacher training program (regular program for teacher certification) and PAS (special program for teacher certification)
- 2012-15 CIFIS Piemonte: PRESIDENT of the Science and Agriculture Area Internship Course Council
- 2007-2012 University of Turin, Department of Mathematics: PRESIDENT of the Department's tutoring commission
- 2000-2008 SIS Piemonte: Faculty COORDINATOR for the teacher training program and MEMBER of the University Commission for the teacher training program

PARTICIPATION:
- 2023-present Department of Mathematics: MEMBER of the Teaching Board of the Doctorate in Mathematics
- 2022-present University of Turin and Polytechnic of Turin, Doctorate in Pure and Applied Mathematics: MEMBER of the Teaching Body
- 2013-2020 University of Turin and Polytechnic of Turin, Doctorate in Pure and Applied Mathematics: MEMBER of the Teaching Body

- 2019-present University of Turin: MEMBER of the CIRDA Management Committee
- 2018-present University of Turin: MEMBER of the College of the School of Natural Sciences
- 2018-present University of Turin: MEMBER of the Department Board
- 2017-2018 University of Turin: MEMBER of the coordination group of the School of Natural Sciences for the Scientific Degree Plan, aimed at teacher training programs
- 2013-2016 USR Piedmont: REPRESENTATIVE of the University of Turin for the implementation of the new curriculum for primary and lower secondary schools
- 2012-2016 CIFIS Piemonte: MEMBER (representative of the University of Turin - Scientific Area) of the University Commission for the TFA teacher training program (teacher certification) and of the PAS (special teacher certification)
- 2013-2015 University of Turin, Department of Mathematics: MEMBER of the Scientific Committee of the Master in Mathematics Teacher Training
- 2012-2015 University of Turin, Department of Mathematics: MEMBER of the Department Board
- 2000-2008 SIS Piemonte: MEMBER of the Evaluation Commission for the teacher training program
- 2010-2012 MEMBER of the Faculty Tutoring Commission
- 2008-2012 University of Turin, Department of Mathematics: MEMBER of the e-learning Commission
- 2000-2009 University of Turin, MEMBER of the Council of SIS (Specialization School for Teachers)
- 2000-2009 University of Turin, MEMBER of the monitoring commission of the SIS (Specialization School for Teachers)
- 2000-2008 SIS Piemonte: MEMBER of the University Commission for the teacher training program

COMPETITION COMMISSION:
Commissioner in various competitions for doctoral/researcher/professor positions in various Italian and foreign universities (Austria, Israel, Luxembourg, South Africa, Rome, Turin, Eastern Piedmont, Athens).

RESEARCH
The research paths of my pre-academic and then academic career are characterized by the introduction of new teaching methodologies and technologies for the teaching and learning of mathematics, in light of the theoretical frameworks that can account for changes in teachers' processes and students. Observing processes through theories is therefore an objective that unites methodologies implemented in the various lines described below, with the awareness that the results found must have a significant impact on the teaching practices implemented in schools. For this reason, my commitment to the third mission and to public engagement has always been very high, from initial training to in-service training, to the publication of volumes for teachers, to the organization of conferences, seminars and conferences, up to the web and to social media.

The pre-academic research path (as a school teacher involved in didactic research groups) focused on issues of mathematics and physics teaching linked to the scientific high school programs and the final exam, as well as laboratory activities and formative evaluation. The academic period begins from the trend of demonstration in mathematics, addressed from an epistemological and didactic point of view, with the aim of analyzing the cognitive processes of students, to enter the trend of semiotic-cultural studies, in which gestures constitute significant data, together with words and writings. Another trend focuses on the use of technologies to mediate the learning of mathematics, with the role of the teacher as the fulcrum of class activities. The mathematics teacher is studied in his different roles: as a teaching professional (semiotic game that he uses in the classroom), as a designer of educational paths (task design), in training within communities of teachers, in presence or remotely (MOOC, mathematics enhanced high school, MVI), in collaboration with researchers. The theoretical framework of transposition (didactic, meta-didactic, cultural) is the backdrop to these themes, just as the Lesson Study or Variation Inquiry methodological approaches constitute the fulcrum of experimentation. Another theme develops around deep mathematical meanings, presented through unusual activities, such as MERLO items, memes or problems with multi-level variation. And a theme that cuts across different institutional contexts and different communities is that of the boundary object, promoted by the undersigned in an international team. Gender differences in mathematics and how to bridge them with appropriate teaching methodologies is a recent interest, which is bearing fruit in two projects with colleagues from teaching and economics and statistics.
Sharing these lines with colleagues from other universities, in Italy and abroad, constitutes a priority way of working, in order to conduct research that has a transversal character across different institutional and cultural contexts, observed with common or different theoretical lenses but integrated, to understand which elements remain unchanged and which ones vary as the context changes. The boundary object approach is particularly suited to tackling this research.
Below we specifically list the themes that have characterized my research work, in which it is possible to grasp the evolution of the threads described above, which include them. Each of them has an epistemological, cognitive and didactic component. Some may be partially overlapped. The corresponding experiments concern students and teachers of all school levels.
1. Mechanical oscillations in secondary school: key concepts and laboratory approach in physics teaching.

2. Curriculum innovation at primary and secondary levels: themes and concepts in designing the mathematics curriculum based on skills and knowledge
3. Geometry at secondary level with dynamic geometry software in open problems: cognitive approach
4. Numerical infinity and geometry in middle and secondary schools: semiotic-cultural approach
5. Mathematical laboratory approach to support perceptual-motor activities: cognitive framework of embodiment
6. Functions and graphs at the early algebra level from nursery school to secondary school in technological environments: cultural-semiotic approach
7. Eye movements of students while carrying out mathematical problem solving activities with eye-tracking methodology.
8. The mathematics teacher in communities: meta-didactic transposition model, with integrations of observable variables at macro level (praxeologies) and micro level (agents that cause and modify them)
9. Mathematics teachers working and learning collaboratively: community, MOOC, Lesson Study, ICMI Study
10. The use of MERLO items in mathematical activities: teacher training and experimentation with students
11. Mathematics inclusive and accessible to all: identity of teachers and students
12. Mathematical memes as mathematical "statements" and mathematics education
13. "Boundary object" in mathematics education
14. "Variation inquiry" (MVI) approach in the classroom and in teacher training
15. Gender differences in mathematics at primary school level
16. Meta-didactic transposition and belief for the study of communities of teachers in training and researchers

ORGANIZATION OF INTERNATIONAL CONFERENCES (MEMBER OF THE SCIENTIFIC COMMITTEE):

- 2023 ICTMT16 Congress (Athens, Greece) https://conferences.uoa.gr/event/47/page/293-international-programme-committee-ipc
- 2021 International GeoGebra Congress (Siviglia, Spain)
- 2020 MEDA Congress 2 (Linz, Austria)
- 2020 ICMI Congress Study 25 (Lisbona, Portugal) Teachers of Mathematics Working and Learning in Collaborative Groups http://icmistudy25.ie.ulisboa.pt/ipc-loc/
- 2018 CADGME7 Congress (Coimbra, Portugal) https://www.uc.pt/en/congressos/cadgme2018/generalinformation/pc
- 2017 ICTMT13 Congress (Lyon, France) https://ictmt13.sciencesconf.org/resource/page/id/4
- 2015 ICTMT12 Congress (Faro, Portugal) http://ictmt12.pt
- 2013 ICTMT11 Congress (Bari, Italy)
- 2011 ICTMT10 Congress (Portsmouth, UK)
- 2008-2012 SFIDA (French-Italian Seminar for Algebra Teaching), with P. Boero & N. Douek

COORDINATION OF GROUPS IN INTERNATIONAL CONFERENCES:

- 2023 CERME 13 Budapest, Ungheria: leader di Thematic Working Group 15 Teaching Mathematics with Technology and Other Resources, con B. Barzel, M. Turgut, G. Bozkurt, D. Thurm https://cerme13.renyi.hu/Thematic_Working_Groups
- 2022 CERME 12 Bolzano, Italia: team member di Thematic Working Group 15 Teaching Mathematics with Technology and Other Resources, con M. Turgut e G. Bozkurt; leader: A. Clark-Wilson https://www.cerme12.it/twg-teams/
- 2021 Virtual pre-CERME12 event team member di Thematic Working Group 15 Teaching Mathematics with Technology and Other Resources, con M. Turgut e G. Bozkurt; leader: A. Clark-Wilson http://erme.site/cerme-conferences/virtual-pre-cerme12-event/
- 2022 ICME Shanghai, China (online): leader di TSG 26 The role and the use of technology in the teaching and learning of mathematics at upper secondary level, co-leader G. Aldon
- 2020 ICMI Study 25 Lisbon, Portugal, chair di Theme D - Tools and resources used/designed for teacher collaboration and resulting from teacher collaboration, co-leader Luc Trouche
- 2019 CERME 11 Utrecht, the Netherland: team member di Thematic Working Group 15: Teaching mathematics with resources and technology, con I. Kohanová, M. Turgut; leader: A. Clark-Wilson https://cerme11.org/thematic-working-group-teams/
- 2017 CERME 10 Dublin, Ireland: co-leader Thematic Working Group 15: Teaching mathematics with resources and technology, con G. Aldon, I. Kohanová; leader: A. Clark-Wilson http://cerme10.org/scientific-activities/twg-teams/

- 2015 CERME 9 Prague, Czech Republic: co-leader Thematic Working Group 16 Students' learning mathematics with resources and technology, con N. Sinclair, M. Lokar, leader: H.G. Weigand http://cerme9.webnode.cz/scientific-activities/twg-teams#WG16
- 2014 First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI Bilbao, Spain: leader Special Session Mathematics at School: Teachers, Students, Technology and Assessment, con A. Gutierrez http://www.ehu.eus/en/web/fjim2014/53
- 2013 T^3 Europe Conference Dublin, Ireland, con A. Clark-Wilson, G. Aldon, B. Barzel
- 2012 ICME 12, Seoul, Korea TSG19: Analysis of uses of technology in the learning of mathematics
- 2011 GeoGebra International Congress, Linz, Austria, Algebra group co-leader con P. Drijvers
- Da 2002 a 2011 PME co-leader Working sessions Embodiment and gestures, con L. Edwards, J. Bolite Frant, L. Radford
- 2004 ICME10 Copenhagen, Denmark co-leader Discussion group: Current Problems and Challenges in Upper Secondary, con O. Chapman
- 2003 PME27 Honolulu, Hawai'i: team member Research Forum: Perceptuo-motor Activity and Imagination in Mathematics Learning, con R. Nemirovsky

ORGANIZATION OF NATIONAL CONFERENCES (MEMBER OF THE SCIENTIFIC COMMITTEE):

- 2023 DIFIMA Conference
- 2022 Lesson study conference, Turin
- 2021 AIRDM Doctoral Summer School
- 2021 DIFIMA Conference
- 2019 Section 22 Mathematics education, co-leader with M. Maracci, UMI National Congress, Pavia
- 2019 Educating for rationality conference, Turin
- 2019 DIFIMA Conference
- 2016 and 2017 Summer school for mathematics teachers (UMI-CIIM), Bardonecchia
- 2017 DIFIMA Conference
- 2015 DIFIMA Conference
- 2014 32nd UMI-CIIM Congress, Livorno
- 2015 DIFIMA Conference
- 2013-2019 Arbitration commission of the Italian Association for Research in Mathematics Education (AIRDM)
- 2013 DIFIMA Conference
- 2011- present GeoGebra Italian Day
- 2011 DIFIMA conference
- 2009 DIFIMA conference
- 2007 DIFIMA conference
- 2005 DIFIMA conference
- 2003 DIFIMA conference

PARTICIPATION TO INTERNATIONAL RESEARCH PROJECTS:

- 2023-2025 European Project Transforming Education with Emerging Technologies (TransEET) Project ID:101078875, Call: HORIZON-WIDERA-2021-ACCESS-03, Programme: HORIZON.
- 2021-2024 European Project STEAM-Connect: Co-creating Transdisciplinary STEM-to-STEAM Pedagogical Innovations through Connecting International Learning Communities under the Erasmus+ project, application KA220-SCH-C8F150FC, Programme: Erasmus+
- 2009-12 Comenius EdUmatics: European Development for the Use of Mathematics Technology in Classrooms (number 118155-CP-1-2004-1-UK-COMENIUS-C21), aimed at developing training materials for teachers with technologies: www.edumatics.eu
- 2008-10 Interlink Eye tracking - with University of Lund, Sweden (II04CM4LG5), aimed at studying eye movements in mathematical activity
- TI-nspire CAS Pilot Project 2006-09 - with Texas Instrument
- 2004 Minerva VIM: virtual environment for experimenting with mathematics (116338-CP-1-2004-1-IT-Minerva-M), aimed at developing a virtual environment for teaching mathematics.

PARTICIPATION TO INTERNATIONAL RESEARCH PROJECT SUBMISSIONS:

- 2024 EU DaME
- 2022 EU TransEET
- 2020 Erasmus+ STEAM-Connect

- 2020 COST project ENCoRE (European Network for Collaborative Research in Education)
- 2020 COST project iGeomXXI
- 2019 COST project ENCoRE (European Network for Collaborative Research in Education)
- 2019 COST project iGeomXXI
- 2019 Erasmus+ STEAM-Connect

DIRECTION OF NATIONALS RESEARCH PROJECTS AS PRINCIPAL INVESTIGATOR:

- 2020-2023 University of Turin & CRT Foundation Project: Teacher training in Piedmont on innovative teaching methodologies to overcome the mathematics gender gap
- 2015-2017 University of Turin & CRT Foundation Project: Methodologies, technologies, materials and activities for learning mathematics in an accessible and inclusive way
- 2014-2016 Progetto Dipartimento di Matematica & IBM - Methodologies, technologies, materials and activities for learning mathematics in an accessible and inclusive way
- 2013, 2015, 2017, 2018, 2019, 2020, 2021, 2022: UNITO local research project, Department of Mathematics
- 2006-08 TI-Navigator pilot project, with Texas Instruments and the Department of Mathematics

PARTICIPATION TO NATIONAL RESEARCH PROJECTS:

- 2023-2025 PRIN Partner of Italian project PRIN Tackling Inequalities in Educational Outcomes: Experimental Evidence from Italian Primary Schools - CUP J53D23004640006
- 2018-2020 UNITO University Project Tackle the gender gap in Piedmont
- 2009-2011 PRIN09 Resources and technologies in the teaching-learning of mathematics (2009RF54LL_006, coordinated by M. G. Bartolini Bussi)
- 2007-09 PRIN07 Tools and representations in the teaching-learning of mathematics: theory and practice (2007B2M4EK, coordinated by M. G. Bartolini Bussi)
- 2005-07 PRIN05 Meanings, conjectures, evidence: from research on embodied cognition to curricular implications (2005019721, coordinated by M. G. Bartolini Bussi)
- 2003-05 PRIN03 Concepts and proofs in mathematics: meanings, models, theories (2003011072, coordinated by M. G. Bartolini Bussi)
- 2003 MIUR & CNR strategic project (coordinated by V. Villani)
- 2002 Collaborative project for research by the University and the Ministry of Education (coordinated by F. Arzarello) linguistic processes in mathematics

DIRECTION OF NATIONAL SCIENTIFIC INSTITUTIONS:

- 2010-present: DIRECTOR of the GeoGebra Institute of Turin
- 2013-present: COORDINATOR of all Italian GeoGebra Institutes (Turin, Bari, Rome, Milan, Padua)

DIRECTION OF NATIONAL SCIENTIFIC COMMITTEES:

- 2012-present PLS national project (Scientific Degree Plan): responsible for Piedmont
- 2008-present DI.FI.MA. Project online (University of Turin, Faculty of Sciences MFN, Province of Turin) http://difima.i-learn.unito.it/
- 2010-present Annual national GeoGebra Day congress of the GeoGebra Institute of Turin http://www.difima.unito.it/geoday16/
- 2003-present DIFIMA biennial National Congress http://www.difima.unito.it/difima17/
- 2008-2015 Quarini project for teacher training (University of Turin, Department of Mathematics)
- 2007-2015 Pre-mathematics courses project (University of Turin, MFN Faculty of Science)
- 2004-2009 National seminar on mathematics education http://www.seminariodidama.unito.it/

PARTICIPATION TO EDITORIAL COMMITTEES OF INTERNATIONAL PROCEEDINGS/MAGAZINES/BOOKS:

- 2023 Conference Proceedings: CERME13 (Budapest, Hungary)
- 2022 Conference Proceedings: CERME12 (Bolzano, Italy)
- 2022 Volume: ICMI Study 25
- 2022 Volume: The Mathematics Teacher in the Digital Era - International Research on Professional Learning and Practice, as of the Second Edition (MEDEra Series), Springer
- 2020 Special Issue: ZDM - The International Journal on Mathematics
- 2019 Conference Proceedings: CERME11 (Utrecht, Netherlands)
- 2017 Conference Proceedings: CERME10 (Dublin, Ireland)
- 2015-present Journal: Digital Experiences in Mathematics Education, Springer
- 2014 Volume: The Mathematics Teacher in the Digital Era (MEDEra Series), Springer
- 2013-present Volume series: Mathematics Education in the Digital Era, Springer

- 2009-11 Journal: International Journal of Studies in Mathematics Education

PARTICIPATION TO REVIEWERS' TEAMS OF INTERNATIONAL MAGAZINES, BOOKS OR CONFERENCE PROCEEDINGS:

Journals:
- Canadian Journal of Science, Mathematics and Technology Education *H-index 19, Quartile Q3*
- Computers & Education *H-index 149, Quartile Q1*
- Digital Experiences in Mathematics Education
- Education Sciences
- Educational Research and Reviews *H-index 10, Quartile Q4*
- Educational Studies in Mathematics *H-index 54, Quartile Q1*
- For the Learning of Mathematics *H-index 8, Quartile Q3*
- International Journal of Computers for Mathematical Learning *H-index 27, Quartile Q3*
- International Journal of Mathematics Teacher Education
- International Journal of Science and Mathematics Education *H-index 31, Quartile Q1*
- International Journal of Studies in Mathematics Education
- Journal of Mathematical Behavior *H-index 37, Quartile Q1*
- Journal of Mathematics Teacher Education *H-index 69, Quartile Q1*
- Latin American Journal for Research in Mathematics Education (RELIME)
- Mathematical Thinking and Learning *H-index 18, Quartile Q1*
- ZDM - The International Journal on Mathematics *H-index 33, Quartile Q1*

Books:
- ICMI Study book
- Handbook of Digital Resources
- IGI Global
- MEDEra Series, Springer

Proceedings:
- CADGME
- CERME
- ICME
- ICMI Study
- ICTMT
- HONEY
- SMEs

PARTICIPATION TO REVIEWERS' TEAMS OF NATIONAL MAGAZINES, BOOKS OR CONFERENCE PROCEEDINGS:

- The teaching of mathematics and integrated sciences
- Volumes printed by UMI
- I met UMI-CIIM

PARTICIPATION TO RESEARCH WORKS WITH THE FOLLOWING COLLEAGUES (FOREIGNS AND ITALIANS):

- Aldon G. (École Normale Supérieure of Lyon, France): mathematics teaching with technologies, Comenius Edumatics, meta-didactic transposition, community of teachers, boundary object; Handbook teachers 2019
- Arzarello F. (University of Turin): use of technologies in modeling student processes, semiotic-cultural approach; meta-didactic transposition; community of teachers in MOOCs; Lesson Study
- Bartolini M. (University of Modena and Reggio Emilia): Lesson Study
- Bazzini L. (University of Turin): active learning
- Bikner A. (University of Bremen): mathematical meme
- Bolite Frant J. (UNIBAN of Sao Paolo, Brazil): embodiment, gestures and multimodality;
- Borba M. (Rio Claro University, Sao Paulo, Brazil): technologies in e-learning;
- Chapman O. (University of Calgary, Canada): Survey of teachers working and learning collaboratively
- Clark-Wilson A. (Institute of Education, University College London, UK): Comenius Edumatics, teacher training with technologies, Medera volume; survey of teachers working and learning collaboratively; community of teachers
- Contini, D. (University of Turin): gender gap in mathematics
- Cooper J. (University of Haifa): boundary object, Handbook teacher 2019
- Cusi A. (Sapienza University of Rome): meta-didactic transposition, investigation of teachers who work and learn in collaboration; community of teachers, inclusion, boundary object, variation inquiry, Handbook teacher 2019
- Di Tommaso M. L. (University of Turin): gender gap in mathematics

- Edwards L. (St Mary's College, California, USA): embodiment, gestures and multimodality
- Esteley C. (National University of Cordoba, Argentina): survey of teachers working and learning collaboratively
- Faggiano E. (University of Bari): "variation inquiry" method
- Ferrara F. (University of Turin): perceptual-motor activities and cognitive processes, semiotic approach, gender gap in mathematics
- Garuti R. (INVALSI): meta-didactic transposition
- Goos M. (University of Queensland, Brisbane, Australia): Survey of teachers working and learning collaboratively
- Gutierrez A. (Universitat de València, Spain): use of ICT in teaching and learning mathematics, Joint Meeting UMI-Bilbao
- Haspekian M. (Université Paris Cité): theories on teacher training with technologies
- Healy L. (University of London, United Kingdom): gestures and multimodality
- Hohenwarter M. (University of Linz, Austria): GeoGebra as a tool for learning mathematics, MERLO project
- Holmqvist K. (Laboratory Humanistic Technologies, Lund, Sweden): eye movement
- Huang, R. (Middle Tennessee State University, USA): Lesson Study
- Isoda M. (University of Tsukuba, Japan): Survey of teachers working and learning collaboratively
- Jaworski B. (Loughborough University, UK): Survey of teachers working and learning collaboratively
- Joubert M. (African Institute of Mathematical Sciences, South Africa): survey of teachers working and learning collaboratively
- Kenett R. (KPA Group, Israel and University of Turin): MERLO project
- Lavizca Z. (University of Cambridge, United Kingdom): research and teaching practice with GeoGebra in teaching communities, MERLO project
- Malara N. (University of Modena and Reggio Emilia): meta-didactic transposition
- Martinovic D. (University of Windsor, Canada): Medera volume series, Springer
- Miyakawa T. (Waswda University, Japan): Lesson study
- Nemirovsky R. (University of Manchester, United Kingdom): technologies in perceptual-motor activity
- Nolli N. (INVALSI): high school leaving exams
- Olivero F. (Graduate School of Education, Bristol, UK): measurement and entrainment in Cabri
- Olsher S. (Università di Haifa): boundary object, Handbook teacher 2019
- Panero M. (SUPSI Locarno): meta-didactic transposition; community of teachers in MOOCs, Handbook teachers 2019
- Pratt D. (Institute of Education, University of London, UK): Survey of PME research over thirty years
- Prodromou T. (University of New England, Australia): teacher professional development with GeoGebra; MERLO project
- Rasmussen C. (University of San Diego, USA): boundary object
- Recio T. (University of Cantabria): IMALI project
- Sabena C. (University of Turin): integrals with technology, semiotic approach, meta-didactic transposition, gestures
- Shafrir U. (University of Toronto, Canada): MERLO project
- Silva, J. (University of Coimbra): IMALI project
- Sinclair N. (University of S. Fraser, Canada): dynamic geometry, Springer Encyclopaedia, Medera volume, MERLO project: dynamic elements
- Soury-Lavergne S. (École Normale Supérieure of Lyon) Meta-didactic transposition
- Swidan O. (Ben-Gurion University, University of the Negev, Beersheba, Israel), modeling in mathematics education, MVI approach in secondary mathematics; Handbook teachers 2019
- Taranto E. (University of Catania): MOOC, meta-didactic transposition, resources
- Thomas M. (University of Auckland, New Zealand) gestures; special issue ZDM 2020
- Trouche L. (École Normale Supérieure of Lyon, France) experiments with technologies; ICMI Study 25
- Valero P. (Stockholm University, Sweden): Mathematics student identity, asceticism in mathematics
- Yerushalmy M. (University of Haifa) technology in teaching and learning mathematics; boundary objects in mathematics education

TALKS IN INTERNATIONAL CONFERENCES:

- 2018 CADGME7 in Coimbra, Portugal "Mathematics teachers working in collaboration with the use of technology" https://www.uc.pt/en/congressos/cadgme2018/generalinformation/copy_of_index
- 2017 CFIES in Grenoble, France "Didactics, new supports and new methods for teaching statistics"http://cfies2017.sfds.asso.fr/
- 2015 CIEAEM in Aosta, Italy "Mathematics teacher education in the institutions: new frontiers and challenges from research" http://cieaem67.perladidattica.it/
- 2012 Latin American Symposium Integration of Technology in the Mathematics and Science Classroom in Mexico City, Mexico "Multiple and dynamic representations in modeling activities: students' processes and interactions"
- 2010 Research Meeting in Mathematics Education, Lisbon, Portugal "Community of learners with technologies"

- 2008 Congress Sharing Inspirations, Berlin, Germany “Multirepresentations in TI-Nspire and TI-Navigator environments” (with F. Arzarello)
- 2006 III History Colloquium Technology in Mathematics Teaching, Sao Paulo, Brazil “The graph sense from kinder-garten to secondary school”
- 2006 Joint Meeting UMI-SIMAI andSMAI-SMF Mathematics and its Applications, Turin, Italy “Interactions in classroom with technologies: signs and meanings”
- 2004 III Cabri-World, Roma, Italy “Experimenting and explaining quantity variations to learn functions with Cabri-Gèomètre” with D. Paola

VISITING PROFESSOR IN FOREIGN UNIVERSITIES
- 2019-04 University of Cordoba, Argentina
- 2018-04 University of Linz, Austria

INVITED SPEAKER IN NATIONAL CONFERENCES AND SEMINARS (LAST YEARS ONLY):
- 2024 Castel San Pietro Terme Mathematics Conference
- 05/29/2023 “The Klein Italia project”, with F. Arzarello, Mathesis Subalpina - Conferences and Seminars, Turin
- 2022 Genoa University
- 2022 Rome Sapienza University doctoral seminars
- 21/10/21 Milan State University
- 02/21/2020 with M. L. Di Tommaso “Counteracting the gender gap in mathematics in Piedmont”, Gender gap in mathematics – A day of interdisciplinary study, State University, Milan
- 12/12/2019 with F. Arzarello E. Taranto “UnTo's experience with MOOCs: theoretical frameworks and lines of research on teachers and researchers”, E-learning and mathematics conference in university and post-university education: good practices and lines of research, Salerno
- 11/28/2019 with F. Ferrara, “Gender gap in mathematics in Piedmont and mathematics education”, Mathesis Subalpina, Turin
- 08/11/2019 “Methodological research approach: teachers and students at work”, Mathematical High School Seminar: ideas and experiences compared, Florence
- 10/18/2019 "The mathematics laboratory between research and experimentation", Seminar on the occasion of the inauguration of the mathematics laboratory of the IIS Arimondi Eula dedicated to Emma Castelnuovo, Savigliano
- 09/19/2019 "Research themes and methodologies in the mathematical high school project: the Turin experience", Third national seminar on mathematical high schools, Salerno
- 02/09/2019 “Teacher training to promote the methodology of varied research in the classroom”, with A. Cusi and F. Arzarello, Section n.22 of Mathematics Education, UMI Conference, Pavia
- 01/21/2019 "Addressing mathematics problems with a methodological approach for teachers and students" Seminar Postmodernity and complexity: the interdisciplinary proposal of the LES, Pinerolo
- 05/07/2019 “Mathematics teaching methodologies to encourage a research approach in students” with O. Swidan, A. Cusi, PLS Seminar, Bari
- 11/17/2018 “Teachers who learn, teachers who teach” National Mathematics Conference, Castel San Pietro Terme;
- 09/13/2018 “What mathematics in mathematical high schools?” round table in the Second national seminar on mathematical high schools, Salerno
- 09/07/2018 “Inclusive mathematics to support the construction of positive identities: a challenge for the teacher” with A. Cusi, GRIMED, Turin
- 04/16/2018 "Second test for the state exam: the voice of the CIIM", Mathematics and state exam conference at the end of the second education cycle, UMI-CIIM and CNR, Rome
- 03/22/2018 “Mathematics in mathematical high schools”, with F. Arzarello, Mathesis Subalpina - Conferences and Seminars, Turin
- 08/10/2017 "Gender issues in Mathematics", round table, with M. L. Di Tommaso, XXXIV UMI–CIIM Conference, BARI, 2017, http://umi.dm.unibo.it/ciim/
- 09/13/2017 “Training models in mathematical high schools” panel in the First national seminar on mathematical high schools, Salerno
- 03/27/2017 “Collaboration to make teachers protagonists of their own training: examples from Italy and the world”, with A. Cusi, Mathesis Subalpina - Conferences and Seminars, Turin
- 09/08/2015 “Dynamic teaching and learning”, Conference on methodological approach to transversal and laboratory teaching for the acquisition of skills, Rivoli
- 02/26/2015 “GeoGebra: dynamic teaching and learning”, Conference on the training of mathematics teachers Padua
- 07/10/2015 “Teachers in design and experimentation communities: processes and methodologies”, VII DIFIMA Conference, Turin

- 10/04/2015 "Body of words, symbols in mathematics: a laboratory approach", GRIMED Conference, Lucca, 2015, http://www.grimed.net/wp-content/uploads/2015/02/Programma-convegno-Lucca. pdf
- 04/16/2015 “Mathematics teaching and YouTube” with F. Floris, F. Magonara, C. Tallone, Mathesis Subalpina - Conferences and Seminars, Turin
- 21/11/2014 “Mathematics teaching and videos on YouTube”, Scientix National Conference, Lucca
- 4/10/2013 “GeoGebra Institutes in Italy”, III GeoGebra Day, Turin;
- 27/10/2012 “GeoGebra Institute in Italy”, II GeoGebra Day, Turin;
- 09/28/2012 “The mathematics teacher between the institutional context and the classroom”, Conference Mathematics in secondary schools, Turin;
- 28-30/01/2012 “Twenty years later: Pisa 1991 – Rimini 2012 From research in mathematics teaching to research on teacher training”, with F. Arzarello, A. Cusi, R. Garuti, N. Malara, F Martignone, C. Sabena, National Research Seminar in Mathematics Teaching “G. Prodi"
- 7/10/2011 “Research, teacher training, experiments”, V DIFIMA Conference, Turin;
- 05/06/2011 “Research and teaching experimentation with dynamic geometry software” Inauguration seminar Italian GeoGebra Institute, Bari;
- 04/06/2011 “The M@t.abel project: a bridge between different school levels”, Ritorno a Mathelandia conference. The New Mathematics Curricula of secondary school, Rimini;
- 22/10/2010 “The teaching and learning of mathematics in high schools”, AIF Conference, Salerno;
- 07/11/2009 “Teaching and learning mathematics in the 21st century: global challenges and national responses”, National Mathematics Conference 2009, Castel San Pietro Terme;
- 09/21/2009 “Mathematics and physics in specialization schools”, SIS Conference, Turin;
- 09/13/2009 “ProjectM@t.abel and PON”, ProjectM@t.abel, Montecatini Terme;
- 09/09/2009 “From numbers to relationships: communities of practice with the Moodle platform”, IV DIFIMA Conference, Turin;
- 09/08/2009 “The teaching of mathematics: how to change”, IV DIFIMA Conference, Turin;
- 05/07/2009 “Teachers as a professional learning community: Moodle to support a multi-discipline project in Piedmont”, MoodleMoot Italia, Turin;
- 04/20/2009 “ProjectM@t.abel and PON and their contextualization in international research”, ProjectM@t.abel, Sestri Levante;
- 02/26/2009 “The prospects of initial training”, SIS Conference, Turin;
- 10/31/2008 “Measure and Cabri: epistemological and didactic aspects in learning geometry”, Dynamic geometry seminars, Rome;
- 26/11/2007 “Teaching mathematics today: the challenges of globalization and technology”, ProjectM@t.abel, Montecatini Terme.
- 2/12/2006 Mathematics in the laboratory and interaction between students. UMI-CIIM conference The teaching-learning of mathematics in the technological society: problems and prospects, Reggio Emilia

PRESENTATIONS IN INTERNATIONAL CONFERENCES (LAST YEARS ONLY):

- 2023 CERME, Budapest
- 2022 PME Alicante, Spain
- 2019 WALS Amsterdam, Netherlands
- 2019 CIEAEM Braga, Portugal
- 2019 BRIDGES Linz, Austria
- 2019 PME Regional conference Moscow, Russia
- 2019 CERME11 Utrecht, The Netherlands
- 2018 CME, Warsaw, Poland
- 2018 CADGME, Coimbra, Portugal
- 2018 Resources Congress, Lyon, Portugal
- 2017 GeoGebra Centre, Linz, Austria
- 2017 CERME10, Dublin, Ireland
- 2017 CFIES, Grenoble, France
- 2016 ICME, Hamburg, Germany
- 2016 PME40, Szeged, Hungary
- 2016 ENBIS, Sheffield, UK
- 2016 INTED, Valencia, Spain
- 2015 CIEAEM, Aosta, Italy
- 2015 IES, Bari, Italy
- 2015 PME39, Hogart, Australia
- 2014 PME38, Vancouver, Canada
- 2013 CIEAEM, Torino
- 2013 PME37, Kiel, Germany

- 2013 T^3 Europe, Dublin, Ireland
- 2012 PME36, Seoul, Korea
- 2011 PME35, Ankara, Turkey
- 2011 ICTMT10, Portsmouth, UK
- 2011 Linz, Austria
- 2010 SFIDA35, Nice, France
- 2010 2nd International Designs for Learning Conference: Towards a new conceptualization of learning, Stockholm, Sweden
- 2009 PME, Thessaloniki, Greece
- 2009 MPTL14, Udine, Italy
- 2009 Learning and Technology World Forum, London, UK
- 2009 CIEAEM 61, Montreal, Canada
- 2008 This Learning Life 2, Bristol, UK
- 2008 SFIDA30, Nice, France
- 2008 Seminar on gesture, with F. Arzarello, Lund, Sweden
- 2008 ICMI Centenary, Rome, Italy
- 2007 ICTMT8, Hradec Kralove, Czech Republic
- 2007 CIEAEM59, Palermo, Italy
- 2007 CERME5, Cyprus, Greece
- 2005 ICTMT7, Bristol, UK

PRESENTATIONS IN NATIONAL CONFERENCES/SEMINARIES/MEETINGS (LAST YEARS ONLY):

- 2022 IPRASE, Trentino
- 2020 GEO-CRUI, Naples
- 2019 University of Ferrara
- 2019 Mathesis Subalpina, Turin
- 2019 University of Florence
- 2019 University of Parma
- 2018 Mondovì High School
- 2019 Romagnosi Institute, Erba
- 2019 DIFIMA IX, Turin
- 2019 GeoGebra Day, Turin
- 2018 III Seminar INVALSI data: a tool for research, Bari, 2018
- 2018 GRIMED, Siena
- 2018 GeoGebra Day, Turin
- 2018 Mathesis Subalpina, Turin
- 2018 ITIS Avogadro, Torino
- 2017 DIFIMA VIII, Turin
- 2017 Mathesis Subalpina, Turin
- 2017 Ancona
- 2017 Catania
- 2017 Gubbio High School
- 2017 Livorno Ferraris comprehensive institute
- 2017 GRIMED, Siena
- 2016 GeoGebra Day
- 2015 DIFIMA VII, Turin
- 2015 Mathesis Subalpina, Turin
- 2014 Scientix, Lucca
- 2014 GeoGebra Day, Turin
- 2012 GeoGebra Day, Turin
- 2012 Mathematics in upper secondary school, Turin
- 2011 DIFIMA V, Turin
- 2011 Didamatica, Turin
- 2010 Mathesis Subalpina, Turin
- 2010 AIF Conference, Salerno
- 2009 ProjectM@t.abel and PON, Montecatini Terme
- 2009 MoodleMoot Italia, Torino
- 2009 DIFIMA IV, Turin
- 2009 SIS Conference, Turin
- 2008 MoodleMoot Italia, Padova
- 2008 National Mathematics Conference, Castel San Pietro Terme

- 2007 UniMoodle, Genoa
- 2007 SFIDA29, Genoa
- 2007 MoodleMoot Italy, Reggio Emilia
- 2007 DIFIMA III, Turin
- 2007 Didamatica, Cesena

TEACHING ACTIVITIES AND SUPPLEMENTARY TEACHING AND STUDENT SERVICE ACTIVITIES

My teaching activity took place mainly in the Department of Mathematics, in the bachelor's and master's degree courses and in the doctoral course. Added to this are the science courses for primary education in Turin and Savigliano and the training courses for future teachers of first and second level secondary schools (over the years the various institutions: SIS, TFA, PAS, FIT, which in Piedmont were coordinated by the CIFIS Inter-University Committee).

Note on alternative distance learning: from 24 February 2020, university courses have taken on the form of distance learning courses, due to the COVID emergency. Therefore, both the Didactics of Mathematics 1 course and the Telling Mathematics Laboratory were held through the BigBlueButton or Webex systems, with collection of materials on the Moodle platform, with the following characteristics:

- Synchronous lessons (recorded so they can also be viewed deferred)
- Synchronous discussions
- Asynchronous discussions via the forum
- Group tasks
- Individual tasks
- Chat
- Various materials: slides, articles, videos, …

With the exception of synchronous lessons from the platform, all the other methods were already used by the undersigned since 2008.

At the University of Turin, Department of Mathematics:

- 2022-today in the degree course in Mathematics:
  - Complementary mathematics: concepts and methods
- 2005-2021 during Doctorate in Mathematics:
  - Technologies in teaching and learning mathematics: representations, communication, visualization
- 2007-2021 in the degree course in Mathematics:
  - Introduction to Mathematical Thinking (IPM)
- 2004-present in the Master's degree course in Mathematics:
  - Mathematics teaching 1
- 2017-present in the Master's degree course in Mathematics:
  - Workshop Telling mathematics
- 2017-18 in the Master's degree course in Mathematics:
  - Elementary mathematics from a higher point of view (with Giacardi)
- 2017-18 PREFIT courses:
  - Mathematics teaching 1
  - Methodologies and technologies for teaching mathematics (with Arzarello and Giacardi)
- 2013-15 in the II level Master's degree for teacher trainers in Mathematics Education:
  - Geometry teaching
- 2007-2011 in the degree course in Mathematics:
  - Pre-courses in mathematics for freshmen
- 2007-08 in the Master for in-service teachers in Science Teaching:
  - Technologies in mathematics teaching
- 1999-2004 in the degree course in Mathematics:
  - Elementary mathematics from a higher point of view
  - Complementary mathematics

At the University of Turin, CIFIS Piemonte - Inter-University Center for the Training of Secondary School Teachers:

- 2012-2016 – in the TFA courses: (Active Training Internship):
  - Mathematics education
- 2013-2016 – in PAS courses:
  - Mathematics education

At the University of Turin, Specialization School for Teachers - SIS Piemonte:

- 2000-2008 in the courses:

    - A career in mathematics
    - Algebra education
    - Geometry education
    - Modeling with technologies
    - Mathematics textbooks
    - Assessment in mathematics

At the University of Turin (Turin and Savigliano branches), Department of Philosophy and Educational Sciences:
- 2015-16 in the Master's Degree Course in Primary Education - Savigliano
    - Epistemology and mathematics teaching I (with Luciano)
- 2016-17 in the Master's Degree Course in Primary Education - Savigliano
    - Epistemology and mathematics teaching II (with Robotti)
- 2017-18 in the Master's Degree Course in Primary Education - Savigliano
    - Epistemology and mathematics teaching II (with Robotti)
- 2016-17 in the Master's Degree Course in Primary Education - Turin
    - Epistemology and mathematics teaching II (with Sabena)
- 2017-18 in the Master's Degree Course in Primary Education - Turin
    - Epistemology and mathematics teaching II (with Sabena)

At the University of Pisa
- 2017-18 in the Master for in-service teachers
    - Mathematics education with technologies
- 2016-17 in the Master for in-service teachers
    - Mathematics education with technologies

At the University of Florence
- 2010-11 in the Master for in-service teachers - mathematics with technologies:
    - Geometry education

THESIS IN PROGRESS
10 master thesis in Mathematics
4 degree thesis in Mathematics

THESIS FOLLOWED
4 doctoral thesis in Mathematics education (Bini, Beccuti, Minisola, Pocalana)
1 doctoral thesis in Mathematics education co-supervision with F. Arzarello
22 degree thesis in Mathematics
63 Master thesis in Mathematics
7 Level II Master thesis for mathematics teachers
39 thesis in the training courses for future teachers (TFA, PAS)

TUTORING
Tutoring of degree course students: structured in a traditional way, offering students individual and collective consultancy, and also remotely via email and the University's e-learning platform, which contains all materials relating to the course: handouts, exercises, solutions, previous exams and their solutions, activities done in the classroom. Through the platform, I used two interactive methods: the forum and the self-assessment tests, with immediate correction, online feedback and support material to understand the theory.

SEMINARS
Organization and participation in the research seminars of the MAT/04 group intended for academics (professors and researchers), doctoral students, teacher-researchers.

ERASMUS RESPONSIBILITY FOR MOBILE STUDENTS
- Malmo University, Sweden
- University of Amsterdam, Netherlands
- University of Linz, Austria
- University of Oslo, Norway
- Stockholm University, Sweden
- Laurentian University, Canada

THREE OBSERVATIONS ON RESEARCH AND TEACHER TRAINING

1. Beyond the 120 hours per year, always exceeded to a lesser or greater extent (just because doctoral courses are not included), over the years the number of students has increased, reaching more than 50 in the master's degree (Teaching course of mathematics 1) and more than 200 in the first year of the three-year degree (Introduction to mathematical thinking course), and there were more than 400 in primary education science courses (in which I have taught in recent years), and around 250 in courses pre-FIT (for the acquisition of the 24 compulsory credits to access teaching in secondary schools). The increase in students in these courses acquires a general significance if we consider how much work has been done in the last thirty years not only by myself, but by the MAT/04 group of the current university: great impact on the territory in the schools of every level, great commitment with MIUR in teacher training plans, quality scientific production at national and international level. This work in mathematics education has induced many students from Piedmont and many other regions not only to enroll in the three-year degree in UNITO, but to choose the master's degree in historical-didactic orientation in UNITO, with the aim of following a school in teaching of mathematics that was scientifically strong and internationally positioned. A similar impact has been found in the doctorate, which offers courses in mathematics education and attracts students from all over Italy.

2. The IPM course had as its program basic logic, plane geometry in Hilbert's axiomatics and natural numbers in Peano's axiomatics and had the aim, in the first year of the first semester, of introducing students to the proof in an axiomatic system (of geometry and arithmetic). Introduced in 2007, it has been gradually revised and improved, for example with the expansion of topics such as real numbers and the principle of mathematical induction and a lot of classroom activity on proof. Through the PLS (Action to combat dropout among university students), I combined traditional classroom tutoring with a series of formative assessment tests, on a weekly basis, which the students solved on the Moodle platform, which provides them not only assessment, but supportive indications for recovery. This work resulted in a percentage of more than 90% of students who passed the written test and more than 70% who passed the oral test in the winter sessions. Furthermore, a three-year graduate had as cultural background an axiomatic of plane geometry and arithmetic, to be used as a basic cultural background to understand the axiomatic approach in other courses.

3. Since I have been responsible for the Mathematics PLS I have worked in the various actions of the project (teacher training, laboratories, student self-evaluation and combating dropout) with targeted activities and laboratory methodologies, making use of the collaboration of young doctorates/doctoral students, teacher-researchers , master's graduates, and II level Master's trainers, as well as of course university colleagues. In these project actions I aimed to create synergies between the different school and university contexts and to capitalize on every experience of the various actions with the printing of a corresponding volume to be distributed free of charge to teaching students and teachers in training or in service (on the page http://www.dipmatematica.unito.it/do/home.pl/View?doc=pls.html all volumes are published).

THIRD MISSION - TEACHER TRAINING

As part of the Scientific Degree Plan in recent years, of particular importance for teacher training are:

- The establishment under the patronage of the UNITO Department of Mathematics in 2016 of the Liceo boosted in mathematics project (around 150 second cycle Piedmontese teachers) with monthly training meetings, experimentation in classes and participation in the national seminars of Salerno (https://www.liceomatematico.it/)
- The establishment under the patronage of the UNITO Department of Mathematics in 2017 of the project Lower secondary schools strengthened in mathematics (around 150 first cycle Piedmontese teachers) with monthly training meetings, experimentation in classes and participation in the national seminars of Salerno (https://www.liceomatematico.it/)
- Participation in the project and implementation team of MATHMOOC-UNITO (totally distance learning of around 400 teachers - every year - of all school levels and all regions):
    - *MOOC Geometry 2015/16*
    - *MOOC Issues 2016/17*
    - *MOOC Relationships and Functions 2017/18*
    - *MOOC Data and forecasts 2018/19*
    - *MOOC Templates 2019/20*
- The organization of action research groups:
    - Group on co-variation (with F. Arzarello, S. Bagossi and S. Beltramino)
    - Group on variation inquiry (with F. Arzarello and A. Cusi)
    - Group on MERLO static and dynamic items (with G. Bini and G. Trinchero)
    - Group on mathematical memes (with G. Bini)
    - Group on Lesson Study (with R. Minisola)

PROJECTS WITH IMPACT ON TEACHER TRAINING

- 2016-present National Mathematical High School project (also UMI group from 2020)
- 2007-present MIUR national project: Scientific Degree Plan, with the various actions that characterize it, aimed at:

    - School student orientation and self-evaluation
    - Teacher training
    - Countering dropouts between first and second year of university
- 2007-2016 MIUR national project: PON Strategic support in teaching mathematics with mixed methodology
- 2006-2016 MIUR national teacher training project: m@t.abel
- 2005-08 Ministry of Education project on best teaching practices
- 2001 SeT (Science and Technology) project of the MPI
- 1996-99 Training projects of the Classical Direction of the MPI

PUBLICATIONS FOR TEACHER TRAINING

The materials published over the course of various career years and aimed at the impact of educational research in the world of school are:

Books (in collaboration):

- 2007- today books and activities of the Scientific Degree Plan (various authors, under my scientific responsibility): http://www.dipmatematica.unito.it/do/home.pl/View?doc=pls.html
    - *Proceedings DI.FI.MA 2023*
    - *Proceedings DI.FI.MA 2021*
    - *Proceedings DI.FI.MA 2019*
    - *Let's go demonstrate. Future mathematicians put to the test*
    - *DIFIMA Proceedings 2017*
    - *Atti GEOGEBRA day*
    - *Conference proceedings DI.FI.MA. 2015*
    - *Atti Geogebra Day*
    - *Exploring Solids and Beyond: Doing Geometry with Zometools*
    - *Conference proceedings DI.FI.MA. 2013*
    - *Mathematical competitions and games*
    - *Geometry between reality and theory. Proposals for a vertical curriculum*
    - *Mathematical explorations with GeoGebra 2*
    - *Mathematical explorations with GeoGebra*
- 2006-2016 *Project M@t.abel* http://www.scuolavalore.indire.it/superguida/matabel/
- 2016 Book for teachers*PON Mathematics (m@t.abel)Implementation, results and prospects* http://mediarepository.indire.it/iko/uploads/allegati/O3EN9K83.pdf
- 2010 Book for teachers*m@t.abel: mathematics for students on the threshold of the Third Millennium* http://mediarepository.indire.it/iko/uploads/allegati/M4TZ0GDJ.pdf
- 2004 Book for teachers*Mathematics 2004. Mathematics for the citizen*, UMI-SIS-MIUR
- 2003 Book for teachers*Mathematics 2003. Mathematics for the citizen*, UMI-SIS-MIURhttp://www.umi-ciim.it/materiali-umi-ciim/secondo-ciclo/
- 2001 Book for teachers*Mathematics 2001. Mathematics for the citizen*, UMI-SIS-MIURhttp://www.umi-ciim.it/materiali-umi-ciim/primo-ciclo/
- 1998 Book for teachers Geometry and multimediahttp://www.umi-ciim.it/wp-content/uploads/2013/10/35_Geom.pdf

Handouts and other project materials (collaborative works):

- 2020-23 Klein Italia project materials
- 2012-14 INVALSI: Theoretical framework
- 2009-12 Comenius EdUmatics project
- 2007-16 PON Project
- 2004 VIM Project
- 2004 Hypertext on CD-ROM:*Interactive geometry notebook*, Media Direct
- 2003 CNR project
- 2002 Collaborative Research Project
- 2001 SeT Project
- 1989-1992 PNI: National Plan for Information Technology, MPI

THIRD MISSION - PUBLIC ENGAGEMENT

- 2014-present Matepraticamente – PLS: educational project, aimed at secondary schools, aimed at involving second cycle students in laboratory activities on the 4 thematic nuclei Numbers, Space and Figures, Relations and Functions, Data and Forecasts, using artefacts and tools ranging from "poor" materials, to technological means, to everyday objects. Website: www.matepraticamente.jimdofree.with, Project Facebook page:

https://www.facebook.com/matepraticamente/, Project Instagram page: https://www.instagram.com/matepraticamente/

- 2013-present UNITO YouTube channel Mathematics education - Ornella Robutti: contains short videos that illustrate activities for teaching mathematics in primary, lower secondary and upper secondary schools and are organized on the conceptual nodes of Mathematics reported in the Indications National for the first cycle, for high schools and in the Guidelines for Professional and Technical Institutes: Relations and Functions, Geometry, Arithmetic and Algebra, Data and Forecasts, Logic and Elements of Computer Science: https://www.youtube.com/channel/UCXWF_gKgyUXVSK3t35SdjFA
- 2018-present Facebook page DIFIMA on the Internet aims to give visibility on the national territory to the initiatives aimed at mathematics teachers of all school levels proposed by the research group in Mathematics Teaching of the Department of Mathematics of the University of Turin and by other universities with which this group collaborates: https://www.facebook.com/difima.unito/
- #lifeonmath Mathematical Meme Project is a research project dedicated to the study of the phenomenon of mathematical memes, developed by Giulia Bini as part of her doctoral thesis, which explores both the role of memes as tools born spontaneously in the world*social* to represent mathematical ideas, and the educational potential of using memes in the classroom as tools for the reorganization and systematization of mathematical knowledge and as opportunities to bring students closer to school mathematics: https://lifeonmathmeme.wordpress.com/

RECENT PUBLICATIONS

1. Beccuti, F. & Robutti, O. (2022). Teaching mathematics in today's society: Didactic paradigms, narratives and citizenship. *For the Learning of Mathematics* 42(2), 29-34.
2. Beccuti, F. & Robutti, O. (2022). University students reflecting on a problem involving uncertainty: what if the coin is not fair? *Proceedings of the 12th Congress of the European Society for Research in Mathematics Education*, Bozen-Bolzano, Italy.
3. Bini, G. & Robutti, O. (2020). Is this the real life? Connecting mathematics across cultures. Research Notebooks in Teaching (Mathematics), Special Issue 7, 455–461. G.R.I.M. Department of Mathematics and Computer Science, University of Palermo, Italy.http://math.unipa.it/~grim/quaderno_2020_numspec_7.htm
4. Bini, G., Bikner-Ahsbahs, A. & Robutti, O. (2023). "How to meme it": reverse engineering the creative process of mathematical Internet memes. Educational Studies in Mathematics 112(1), 141–174. https://doi.org/10.1007/s10649-022-10173-1
5. Bini, G., Robutti, O., & Bikner-Ahsbahs, A. (2022). Maths in the time of social media: conceptualizing the Internet phenomenon of mathematical memes. International Journal of Mathematical Education in Science and Technology, 53(6), 1257–1296. https://doi.org/10.1080/0020739X.2020.1807069
6. Bini, G., Robutti, O., & Montagnani, M. (2021). When they tell you that $\boldsymbol{i^{56}} = \mathbf{1}$: Affordances of memes and GeoGebra in mathematics. The International Journal for Technology in Mathematics Education, 28(3), 143–151. https://cloud.3dissue.com/170388/199108/233436/IJTME-Vol28-3-2021/index.html
7. Pocalana, G., Robutti, O., Liljedahl, P. (2023). Inquiry activities are not for everyone: teachers' beliefs and professional development. International Journal of Mathematical Education in Science and Technology. https://doi.org/10.1080/0020739X.2023.2176795
8. Robutti, O., Sabena, C., Krause, C., Soldano, C., Arzarello, F. (2022). Gestures in Mathematics Thinking and Learning. In: Danesi, M. (eds). *Handbook of Cognitive Mathematics*. Springer, Cham. https://doi.org/10.1007/978-3-030-44982-7_8-1.
9. Swidan, O., Cusi, A., Robutti, O., Arzarello, F. (2023). The method of varying inquiry. *For the Learning of Mathematics* 43(1), 14-18.

Turin, 21 February 2024