

CARLO MERCURI

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Abilitazione Scientifica Nazionale alle funzioni di professore universitario di Prima Fascia, Settore Concorsuale 01/A3 — Analisi Matematica, Probabilità e Statistica Matematica. ASN round 2021/2023, decreto direttoriale n. 553/2021 as amended by n. 589/2021; valid twelve years from 28 November 2023, expiring 28 November 2035. Previously abilitato for *Seconda Fascia* in the same sector, 7 May 2021 – 7 May 2030. Disciplinary sector MAT/05 — Mathematical Analysis.

POSITIONS

Nov. 2022 — present	Associate Professor Dipartimento di Scienze Fisiche, Informatiche e Matematiche, Università degli Studi di Modena e Reggio Emilia, Italy.
Nov. 2022 — Sept. 2024	Honorary Associate Professor Department of Mathematics, Swansea University, UK.
Mar. 2021 — Nov. 2022	Associate Professor (permanent, Enhanced Research) Department of Mathematics, Swansea University, UK. Promotion awarded in March 2021 on merit by an interdepartmental committee, on teaching, research and administrative criteria.
Jan.–July 2020	Sabbatical research visit Institute for Complex Molecular Systems (ICMS) and Centre for Analysis, Scientific Computing and Applications (CASA), Technische Universiteit Eindhoven, the Netherlands. A semester's sabbatical granted by Swansea University, spent with Prof. M. A. Peletier on the partial differential equations of molecular chemistry and their numerical approximation — density functional theory. Part-funded, on competitive application, by European funds through the Cherish Digital Economy Centre.
Mar. 2018 — Feb. 2021	Senior Lecturer (permanent, Enhanced Research) Department of Mathematics, Swansea University, UK. Promotion awarded in March 2018 on merit, on the same criteria.
Sept. 2013 — Feb. 2018	Lecturer (permanent, Enhanced Research) Department of Mathematics, Swansea University, UK. Three-year probation confirmed on merit.
June 2011 — Aug. 2013	Postdoctoral researcher Centre for Analysis, Scientific Computing and Applications (CASA) and Institute for Complex Molecular Systems (ICMS), Technische Universiteit Eindhoven, The Netherlands. Supervisor: Prof. M. A. Peletier.
Nov.–Dec. 2010	Postdoctoral fellow Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste, Italy. Member of the mathematical analysis group of Prof. A. Ambrosetti and Prof. A. Malchiodi, within the sector of <i>Functional Analysis and Applications</i> — nonlinear problems in the calculus of variations and partial differential equations, singular perturbations and nonlinear Schrödinger equations, geometric analysis and transport theory.
Feb. — July 2006	Cultore della materia Dipartimento di Matematica, Università degli Studi di Milano, Italy. Responsible: Prof. B. Ruf.

EDUCATION

- 14 July 2017 **Postgraduate Certificate in Teaching in Higher Education**, awarded *with Merit*
Swansea University, UK.
- 25 May 2017 **Fellow of the Higher Education Academy (FHEA)**, UK — recognised against the UK Professional Standards Framework for teaching and learning support in higher education. Recognition reference PR126638.
- 29 Oct. 2010 **PhD in Mathematical Analysis**
International School for Advanced Studies (SISSA/ISAS), Trieste, Italy. Thesis: *On some nonlinear problems with lack of compactness in critical point theory*. Advisor: Prof. A. Ambrosetti.
- 6 Feb. 2006 **Laurea in Theoretical Physics**, 110/110 *cum laude*
Università degli Studi di Milano, Italy. Thesis: *Su una classe di soluzioni di un'equazione di Schrödinger nonlineare: esistenza, concentrazione su una circonferenza e limite semiclassico*. Advisor: Prof. B. Ruf.
- 2006 Awarded, on competitive examination, doctoral scholarships at the Mathematics departments of Pavia and Milan (declined).

PUBLICATIONS

- [1] C. Mercuri and K. Perera, *Variational methods for scaled functionals with applications to the Schrödinger–Poisson–Slater equation*, J. Math. Pures Appl. **212** (2026), 103885.
- [2] E. Gloss, C. Mercuri, K. Perera and B. Ribeiro, *Fractional Schrödinger–Poisson–Slater equations in Coulomb–Sobolev spaces*, J. Geom. Anal. **36** (2026), art. 148.
- [3] B. Baumeier, O. Çaylak, C. Mercuri, M. A. Peletier, G. Prokert and W. Scharpach, *Local existence and uniqueness of solutions to the time-dependent Kohn–Sham equations coupled with classical nuclear dynamics*, J. Math. Anal. Appl. **541** (2025), 128688.
- [4] C. Mercuri and K. Perera, *New multiplicity results for critical p -Laplacian problems*, J. Funct. Anal. **283** (2022), 109536.
- [5] T. Dutko, C. Mercuri and T. M. Tyler, *Groundstates and infinitely many high energy solutions to a class of nonlinear Schrödinger–Poisson systems*, Calc. Var. Partial Differential Equations **60** (2021), art. 174, 46 pp.
- [6] W. Albalawi, C. Mercuri and V. Moroz, *Groundstate asymptotics for a class of singularly perturbed p -Laplacian problems in $\mathbb{R}^N$* , Ann. Mat. Pura Appl. **199** (2020), 23–63.
- [7] C. Mercuri and T. M. Tyler, *On a class of nonlinear Schrödinger–Poisson systems involving a nonradial charge density*, Rev. Mat. Iberoam. **36** (2020), 1021–1070.
- [8] A. Farina, C. Mercuri and M. Willem, *A Liouville theorem for the p -Laplacian and related questions*, Calc. Var. Partial Differential Equations **58** (2019), art. 153.
- [9] C. Mercuri and E. Moreira dos Santos, *Quantitative symmetry breaking of groundstates for a class of weighted Emden–Fowler equations*, Nonlinearity **32** (2019), 4445–4464.
- [10] J. Bellazzini, M. Ghimenti, C. Mercuri, V. Moroz and J. Van Schaftingen, *Sharp Gagliardo–Nirenberg inequalities in fractional Coulomb–Sobolev spaces*, Trans. Amer. Math. Soc. **370** (2018), 8285–8310.
- [11] C. Mercuri, V. Moroz and J. Van Schaftingen, *Groundstates and radial solutions to nonlinear Schrödinger–Poisson–Slater equations at the critical frequency*, Calc. Var. Partial Differential Equations **55** (2016), art. 146.
- [12] C. Mercuri, G. Riey and B. Sciunzi, *A regularity result for the p -Laplacian near uniform ellipticity*, SIAM J. Math. Anal. **48** (2016), 2059–2075.
- [13] C. Mercuri, B. Sciunzi and M. Squassina, *On Coron’s problem for the p -Laplacian*, J. Math. Anal. Appl. **421** (2015), 362–369.
- [14] C. Mercuri and F. Pacella, *On the pure critical exponent problem for the p -Laplacian*, Calc. Var. Partial Differential Equations **49** (2014), 1075–1090.
- [15] C. Mercuri and M. Squassina, *Global compactness for a class of quasi-linear elliptic problems*, Manuscripta Math. **140** (2013), 119–144.

- [16] D. Bonheure, J. Di Cosmo and C. Mercuri, *Concentration on circles for nonlinear Schrödinger–Poisson systems with unbounded potentials vanishing at infinity*, Commun. Contemp. Math. **14** (2012), 1250009.
- [17] D. Bonheure and C. Mercuri, *Embedding theorems and existence results for nonlinear Schrödinger–Poisson systems with unbounded and vanishing potentials*, J. Differential Equations **251** (2011), 1056–1085.
- [18] C. Mercuri and M. Willem, *A global compactness result for the p -Laplacian involving critical nonlinearities*, Discrete Contin. Dyn. Syst. **28** (2010), 469–493.
- [19] M. M. Fall and C. Mercuri, *Foliations of small tubes in Riemannian manifolds by capillary minimal discs*, Nonlinear Anal. **70** (2009), 4422–4440.
- [20] M. M. Fall and C. Mercuri, *Minimal disc-type surfaces embedded in a perturbed cylinder*, Differential Integral Equations **22** (2009), 1115–1124.
- [21] C. Mercuri, *Positive solutions of nonlinear Schrödinger–Poisson systems with radial potentials vanishing at infinity*, Atti Accad. Naz. Lincei Rend. Lincei Mat. Appl. **19** (2008), 211–227.

Preprints.

- P1** C. Mercuri, *Unique continuation, nonexistence and bubbling for the critical p -Laplace equation in the plane*, arXiv:2609.34204.
- P2** A. J. Marinho, C. Mercuri and K. Perera, *New solutions to Schrödinger–Poisson–Slater equations in Coulomb–Sobolev spaces*, arXiv:2602.12784.
- P3** C. Mercuri and R. Molle, *Positive solutions to nonlinear elliptic problems involving Sobolev exponent*, arXiv:2310.10529.

Other publication. G. Bonaschi, O. Filatova, C. Mercuri, A. Muntean, M. A. Peletier, V. Shchetnikava, E. Siero and I. Zisis, *Identification of a response amplitude operator for ships*, Mathematics-in-Industry Case Studies **5** (2013), 1–26. Also in the *Proceedings of the 84th European Study Group Mathematics with Industry* (SWI 2012).

Participation in scientific events.

- 30 Jan. — 3 Feb. 2012 84th European Study Group Mathematics with Industry (SWI 2012), Technische Universiteit Eindhoven, the Netherlands: the problem *Structural integrity of marine structures* brought by MARIN, the Maritime Research Institute Netherlands — the quantitative identification, from measured wave and strain data, of the Response Amplitude Operator governing the stability and structural stress of a ship (see the case study above).
- 17 July 2019 *Swansea Mathematical Sciences — Unplugged*. 11th Annual SALT Learning and Teaching Conference (#SUSALT19), Great Hall, Bay Campus, Swansea University, UK — an account, before a university-wide audience, of the interdisciplinary seminar series of the same name organised by the speaker.

Bibliometrics. Scopus, August 2026: 444 citations, h -index 11.

RESEARCH SUPERVISION

- 2023 **Wouter L. J. Scharpach**, PhD awarded, *Well-posedness for time-dependent Kohn–Sham equations coupled with classical nuclear dynamics*, Technische Universiteit Eindhoven — co-promoter, with Dr B. Baumeier. Defended 21 June 2023.
- 2023 **Tomas Dutko**, PhD awarded, *Solutions to a class of nonlinear Schrödinger equations involving a nonlocal term*, Swansea University — primary supervisor. Three-year project, stipend and fees funded by the Engineering and Physical Sciences Research Council (EPSRC), ref. EPSRC 2018–19 DTP, EP/R51312X/1.
- 2020 **Teresa Megan Tyler**, PhD awarded, *Existence and qualitative properties of solutions to nonlinear Schrödinger–Poisson systems*, Swansea University — primary supervisor.

- 2021 **Andrea Sardilli**, Laurea Magistrale in Matematica Pura ed Applicata, *Existence of ground state solutions for the Schrödinger–Poisson systems in the plane and in the space*, Università degli Studi di Roma “Tor Vergata” — correlatore, with Prof. R. Molle as relatore.
- 2019 **Tomas Dutko**, MSc by Research, *Some nonlinear problems with lack of compactness*, Swansea University — primary supervisor.
- 2017 **Wedad Albalawi**, PhD awarded, *Asymptotic behaviour of ground states of a quasilinear elliptic equation with a vanishing parameter*, Swansea University — joint supervisor with Prof. V. Moroz.
- 2015 **Megan Goode**, MSc by Research, *Concentration on circles for a class of nonlinear Schrödinger equations*, Swansea University — primary supervisor.

Doctoral examination panels.

- 24 Aug. 2026 Member of the PhD examination panel for **Pablo dos Santos Corrêa Junior**, *Analysis of an Emden–Fowler–Hénon type equation*, Instituto de Física de São Carlos, Universidade de São Paulo, Brazil. Supervisors: Prof. E. Moreira dos Santos and Dr D. Schiera.
- 28 June 2023 Member of the PhD examination panel for **Giacomo Ageno**, *Infinite-time blow-up for the nonlinear heat equations in low dimension*, Department of Mathematical Sciences, University of Bath, UK. Supervisors: Prof. M. del Pino and Prof. M. Musso.
- 7 Sept. 2022 Internal examiner for the PhD viva of **Jane Allwright**, *Analysis of Reaction-Diffusion Equations on a Time-Dependent Domain*, School of Mathematics and Computer Science, Swansea University, UK. Supervisor: Prof. E. Crooks.

UNDERGRADUATE SUPERVISION

- 2026 **Matteo Zigni**, Laurea Triennale in Fisica, *Soluzioni di minima energia per un’equazione di Schrödinger non lineare*, Università degli Studi di Modena e Reggio Emilia — relatore. A.A. 2025/26.
- 2025 **Annamaria Grana**, Laurea Triennale in Matematica, *L’atomo di idrogeno e la sua stabilità dal punto di vista matematico*, Università degli Studi di Modena e Reggio Emilia — relatore. A.A. 2024/25.
- 2025 **Alessia Aruta**, Laurea Triennale in Matematica, *Il metodo del moving plane e le sue applicazioni*, Università degli Studi di Modena e Reggio Emilia — relatore. A.A. 2024/25.
- 2023 **Matteo Lugli**, Laurea Triennale in Matematica, *Sulla disuguaglianza isoperimetrica*, Università degli Studi di Modena e Reggio Emilia — relatore. A.A. 2022/2023.

SERVICE AND ESTEEM

- Feb. — May 2026 Member, Comitato Tecnico Scientifico (CTS) evaluating final reports for PRIN 2022.
- 2023 — present Member of the Collegio dei Docenti (doctoral board), PhD programme in Mathematics, Università di Parma and Università degli Studi di Modena e Reggio Emilia.
- 2023 — present Member, GNAMPA (Gruppo Nazionale per l’Analisi Matematica, la Probabilità e le loro Applicazioni), Istituto Nazionale di Alta Matematica (INdAM).
- 2022 — present Member of the mathematical analysis research group, Dipartimento di Scienze Fisiche, Informatiche e Matematiche, UNIMORE.
- 2021 — present Subject Editor for Differential Equations, *Proceedings of the Edinburgh Mathematical Society*.
- 2026 — present Subject Editor for Nonlinear elliptic equations and systems, calculus of variations and critical point theory, *Discrete and Continuous Dynamical Systems — A*.

2019–2022	Selected by Swansea University to receive one of its EPSRC Doctoral Training Partnership studentships (stipend and fees, three years; EPSRC 2018–19 DTP, EP/R51312X/1). The award was made by internal allocation, not on application to the research council, and it placed a nationally funded doctoral position on a project designed and led by the holder: <i>Solutions to a class of nonlinear Schrödinger equations involving a nonlocal term</i> (candidate T. Dutko).
2018–2022	Member, London Mathematical Society.
2013–2022	Member, <i>Analysis and Nonlinear PDEs</i> research group, Department of Mathematics, Swansea University — listed among the affiliated staff for calculus of variations, partial differential equations and nonlinear analysis, alongside F. Brock, E. Crooks, N. Dancer, D. Finkelshtein, N. Jacob, V. Moroz and Z. Sobol. Referee for, among others: Comm. Pure Appl. Math.; Proc. London Math. Soc.; J. Funct. Anal.; Comm. Partial Differential Equations; Calc. Var. PDE; J. Geom. Anal.; Israel J. Math.; Nonlinearity; Commun. Contemp. Math.; Discrete Contin. Dyn. Syst.; J. Math. Anal. Appl.; J. Math. Phys.; Z. Angew. Math. Phys.; Proc. Roy. Soc. Edinburgh A; Anal. Appl.; Milan J. Math.; Nonlinear Anal.; Math. Methods Appl. Sci.; Topol. Methods Nonlinear Anal.; Bound. Value Probl.; J. Dyn. Control Syst.; J. Fixed Point Theory Appl.
2019	Reviewer, FONDECYT Initiation into Research, CONICYT, Chile.

ORGANISATION OF WORKSHOPS AND SEMINARS

2019–2021	Founder and organiser, interdisciplinary seminar series <i>Swansea Mathematical Sciences — Unplugged</i> , Swansea University. Presented to the university’s SALT Learning and Teaching Conference, 17 July 2019.
2015	Organiser, workshop <i>Abstract and applied perspectives in nonlinear partial differential equations</i> , Swansea University.

INVITED LECTURES

15 Oct. 2026	Convegno Internazionale <i>Ada Lovelace Day in Urbino 2026</i> , Collegio Raffaello, Università degli Studi di Urbino Carlo Bo, Italy. Organisers: R. Servadei, G. Molica Bisci and G. de J. M. Figueiredo.
7–11 Sept. 2026	2nd Joint Meeting Brazil–Italy in Mathematics, University of Messina, Italy — Special Session 7, <i>Recent Developments in Nonlinear Partial Differential Equations</i> . Organisers: G. Riey, L. de Almeida Maia and R. Molle.
29 May 2026	International Conference on Elliptic and Parabolic Problems, Gaeta-2026, Italy — Mini-symposium MS-15, <i>Qualitative and Variational Aspects of Elliptic PDEs</i> . Organisers: G. Mancini and G. Romani.
20–24 Apr. 2026	<i>Solutions to nonlinear Schrödinger equations involving Coulombic interactions</i> . Workshop on the Foundations and Extensions of Density-Functional Theory, OsloMet — Oslo Metropolitan University, Norway. Organisers: A. Laestadius and V. H. Bakkestuen.
5 Sept. 2025	<i>Solutions to nonlinear Schrödinger equations involving Coulombic interactions</i> . XIII Brazil–Italy Workshop in Nonlinear Differential Equations, Palazzo dei Musei, Modena, Italy, 1–5 September 2025. Organisers: C. Tarsi, F. Sani, M. Calanchi, E. Terraneo and E. Moreira dos Santos.
1 Feb. 2024	<i>Solutions to nonlinear elliptic problems involving Sobolev exponent</i> . Seminar P(n)/N(p), Dipartimento di Matematica, Sapienza Università di Roma, Italy. Host: G. Galise.
10–14 July 2023	Workshop <i>Calculus of Variations NL 2023</i> , Schiermonnikoog, the Netherlands. Organisers: M. Carioni, R. Cristoferi and Y. van Gennip.
21 June 2023	<i>On some p-Laplacian problems involving critical nonlinearities</i> . CASA Mini-Symposium on the occasion of the PhD defence of W. Scharpach, Technische Universiteit Eindhoven, the Netherlands. Host: M. A. Peletier.

18–19 May 2023	Workshop <i>Variational and PDE Problems in Geometric Analysis, IV</i> , Dipartimento di Matematica, Alma Mater Studiorum Università di Bologna, Italy. Organisers: V. Martino and G. Tralli.
10 June 2021	<i>Groundstate asymptotics for a class of singularly perturbed p-Laplacian problems in $\mathbb{R}^N$</i> . Mathematical Analysis Group, Università degli Studi di Modena e Reggio Emilia, Italy (online). Hosts: S. Polidoro and F. Sani.
30 July 2019	XI Brazil–Italy Workshop in Nonlinear Differential Equations, Varese, Italy. Host: B. Ruf.
16 Apr. 2019	Università degli Studi di Roma “Tor Vergata”, Italy. Host: R. Molle.
11 Sept. 2018	Universidad Nacional Autónoma de México (UNAM), Mexico. Host: M. Clapp.
6 June 2018	Università degli Studi di Milano, Italy. Host: B. Ruf.
15 Jan. 2018	<i>A new class of integral inequalities involving Coulomb-type energies of radial functions</i> . African Institute for Mathematical Sciences (AIMS), Senegal. Host: M. M. Fall.
15 May 2017	Université catholique de Louvain, Louvain-la-Neuve, Belgium. Host: M. Willem.
28 Oct. 2016	Riemann International School of Mathematics, Varese, Italy. Hosts: D. Cassani and B. Ruf.
26–27 May 2016	Workshop <i>Young Applied Analysts in the UK II</i> , University of Bath, UK. Organisers: D. Bourne and L. Scardia.
13 May 2016	Université libre de Bruxelles, Belgium. Host: D. Bonheure.
20 Apr. 2016	<i>A quasilinear boundary value problem involving Sobolev’s exponent</i> . Second meeting of the South-West Network in Generalised Solutions for Nonlinear PDEs, School of Mathematics, Cardiff University, UK.
4 Apr. 2016	Maxwell Institute, University of Edinburgh, UK. Host: T. Oh.
12 Nov. 2015	University of Bath, UK. Host: G. R. Burton.
1 Sept. 2015	Universidade Estadual de Campinas (UNICAMP), Brazil. Host: D. De Figueiredo.
21 Aug. 2015	Universidade de São Paulo (USP), Brazil. Hosts: P. Piccione and G. Siciliano.
29–30 May 2014	<i>Some quasilinear elliptic problems involving the critical Sobolev exponent</i> . Workshop <i>Young Applied Analysts in the UK</i> , University of Glasgow, UK. Organisers: D. Bourne and L. Scardia.
5 Mar. 2014	<i>Qualche problema senza compattezza per il p-Laplaciano</i> . Dipartimento di Matematica e Informatica, Università della Calabria, Italy. Host: B. Sciunzi.
17 Jan. 2014	University of Warwick, UK. Host: F. Theil.
5 Nov. 2013	Rutgers University, USA. Host: A. Bahri.
30 May — 6 June 2012	<i>On the pure critical exponent problem for the p-Laplacian</i> . Spring School in Nonlinear Partial Differential Equations, Brussels, Belgium (Université catholique de Louvain, Université libre de Bruxelles and Université de Mons). Host: D. Bonheure.
2 May 2012	Courant Institute of Mathematical Sciences, New York University, USA. Hosts: R. Kohn and J. Lu.
7 Nov. 2011	Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy, during the school <i>Mathematical Principles for and Advances in Continuum Mechanics</i> . Organiser: P. M. Mariano.
26 May 2011	Sapienza Università di Roma, Italy. Host: F. Pacella.
15 Mar. 2011	ETH Zürich, Switzerland. Host: M. Struwe.
22 Oct. 2010	Universidad Autónoma de Madrid, Spain. Host: I. Peral.

FUNDING AWARDED

2025	€500 — <i>Professori Visitatori GNAMPA, periodo 1 gennaio – 30 giugno 2025</i> , Gruppo Nazionale per l’Analisi Matematica, la Probabilità e le loro Applicazioni (GNAMPA), Istituto Nazionale di Alta Matematica (INdAM). Host of Prof. Mark A. Peletier (Department of Mathematics and Computer Science, Eindhoven University of Technology, the Netherlands), 23 Apr.–3 May 2025. CUP E53C24001950001. Competitive.
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2024	€2 500 — <i>Progetti di Ricerca GNAMPA 2024</i> , GNAMPA–INdAM: <i>Molteplicità e proprietà qualitative di soluzioni di equazioni nonlocali del tipo Schrödinger</i> . Principal investigator (coordinatore), leading a team of five with F. Gladiali, M. Grossi, R. Molle and D. Passaseo. CUP E53C23001670001. Competitive.
2024	€1 900 — <i>Professori Visitatori GNAMPA, periodo 1 gennaio – 30 giugno 2024</i> , GNAMPA–INdAM. Host of Prof. Kanishka Perera (Department of Mathematical Sciences, Florida Institute of Technology, USA), 10–28 June 2024, nineteen funded days. CUP E53C22001930001. Competitive.
2023–2024	€2 500 — <i>Progetti di Ricerca GNAMPA 2023</i> , GNAMPA–INdAM: <i>Problemi ellittici non-lineari con p-Laplaciano e mancanza di compattezza</i> . Participant; coordinator R. Molle, with M. Grossi and D. Passaseo. CUP E53C22001930001. Competitive.
2023	€667 — <i>Professori Visitatori GNAMPA, periodo luglio – dicembre 2023</i> , GNAMPA–INdAM. Host of Prof. Oana Pocovnicu (Department of Mathematics, Heriot-Watt University, Edinburgh, UK), 8–15 Dec. 2023. CUP E53C22001930001. Competitive.
2020	£2 000 — Collaboration and Knowledge Exchange Support, M69, Cherish Digital Economy Centre (European funds), UK, for the sabbatical collaboration with Prof. M. A. Peletier at Eindhoven on density functional theory. Competitive.
2019	£1 800 — London Mathematical Society travel grant, Collaboration with Developing Countries. Competitive.
2019	£800 — London Mathematical Society travel grant, Research in Pairs. Competitive.
2018	£1 000 — Santander staff mobility funding, collaboration with the Mexican mathematical community. Competitive.
2017	£1 740 — London Mathematical Society travel grant, Collaboration with Developing Countries. Competitive.
2016	€1 100 — UCLouvain research visit grant.
2015	£1 739 — College of Science, Swansea University, to support a conference on partial differential equations. Competitive.
2014	£1 000 — Santander staff mobility funding, collaboration with the Brazilian mathematical community. Competitive.
2013	\$3 000 — Rutgers University research visit grant.

GRADUATE TEACHING

Mar. — May 2025	Doctoral course, <i>On some nonlinear and nonlocal elliptic PDEs on $\mathbb{R}^N$</i> , Università degli Studi di Modena e Reggio Emilia (24 h, 6 CFU). Variational methods for nonlinear elliptic equations on unbounded domains: critical point theory, the Lagrange multiplier rule and the Mountain Pass Theorem, applied to the nonlinear Schrödinger and Schrödinger–Poisson–Slater equations, their functional settings and compactness properties, closing on open problems and possible thesis topics.
26 Nov.–9 Dec. 2023	Doctoral course, <i>On some classes of nonlinear and nonlocal elliptic PDEs on $\mathbb{R}^N$</i> , Dipartimento di Matematica, Università degli Studi di Roma “Tor Vergata”, at the invitation of Prof. R. Molle; funded by the department’s <i>Dipartimento di Eccellenza</i> programme (appointment of 2 Nov. 2023, prot. 0001175). Second delivery, following the course of 2022.

16 May — 9 June 2022	Doctoral course, <i>On some classes of nonlinear and nonlocal elliptic PDEs on $\mathbb{R}^N$</i>, PhD School in Mathematics, Dipartimento di Matematica, Università degli Studi di Roma “Tor Vergata”, given jointly with Prof. R. Molle (own share five two-hour lectures, 10 h). An introduction to the language and methods for nonlinear PDEs on unbounded domains: the direct method of the calculus of variations, the Lagrange multiplier rule and the Mountain Pass Theorem, applied to two model problems, the Choquard equation and the nonlinear Schrödinger–Poisson–Slater equation — their variational formulation, functional setting and compactness properties, known results and open directions. Funded by the department’s <i>Progetto di Eccellenza</i> programme (appointment of 24 May 2022, prot. 0000667); recorded for publication on the department’s channels.
Nov.–Dec. 2010	PhD mini-course, <i>Some compactness results in calculus of variations and in critical point theory</i>, SISSA, Trieste, Italy.

UNDERGRADUATE TEACHING

2025/26	Università degli Studi di Modena e Reggio Emilia: <i>Analisi Superiore</i>, Fourier-analysis module, Laurea Magistrale in Matematica (21 h, 3 CFU); <i>Analisi Matematica II</i>, Laurea in Informatica (48 h, 6 CFU); <i>Analisi Matematica II</i>, Laurea in Ingegneria Informatica (72 h, 8 CFU). Total 141 contact hours.
2023/24, 2024/25	Università degli Studi di Modena e Reggio Emilia: <i>Teoria delle Funzioni</i>, Laurea in Matematica (24 h, 3 CFU: maximum principles, the Poisson kernel, the inverse function theorem and the implicit function theorem, Brouwer’s degree); <i>Analisi Matematica II</i>, Laurea in Ingegneria Informatica (72 h, 8 CFU), and a shared module of <i>Analisi Matematica II</i> for Ingegneria Civile e Ambientale (27 h, 3 CFU). Total 123 contact hours in each year.
2013–2022	Module leader (<i>titolare</i>) at Swansea University, continuously from 2013/14, for bachelor’s and master’s modules of the Department of Mathematics: <i>Partial Differential Equations</i> (MA-311/M11, 2013/14 and 2015/16); <i>Methods of Algebra and Calculus</i> (MA-121, 2014/15 to 2017/18); <i>Fundamental Algebra</i> (MA-003, 2014/15); <i>(Ordinary) Differential Equations</i> (MA-314/M14, 2016/17 and 2018/19); <i>Introduction to Ordinary Differential Equations</i> (MA-241, 2018/19 and 2019/20); <i>Calculus of Variations</i> (MA-386/M86). Module leadership carried the full semester — lectures, teaching material, weekly tests, problem classes, and the setting and marking of examinations, whose papers were submitted to external examiners from other institutions for judgement against UK national standards. Established the modules MA-241 and MA-386/M86 within the Swansea mathematics programme.
2013–2022	Swansea University, alongside module teaching: weekly office hours; learning support for a group of up to six first-year bachelor’s students; academic mentor to about eighteen students, six in each year of the bachelor’s degree; supervision of some five bachelor’s dissertations and two master’s dissertations a year; and participation in the Board of Studies, in the design of new modules, and in the reviews of student and examination performance and of student satisfaction.
Sept.–Oct. 2012	<i>Calculus and Linear Algebra</i> (2DN30), Technische Universiteit Eindhoven, the Netherlands.
Apr.–May 2012	<i>Vector Calculus</i> (2DM30), Technische Universiteit Eindhoven, the Netherlands.
Sept. 2011 — Jan. 2012	Lecture series on the Schrödinger equation, Institute for Complex Molecular Systems (ICMS), Technische Universiteit Eindhoven, the Netherlands.

ADMINISTRATIVE RESPONSIBILITIES

May 2025 — Nov. 2026	PI, €11 000 — FAR (Fondo di Ateneo per la Ricerca) project <i>Equazioni differenziali alle derivate parziali e calcolo delle variazioni</i>, UNIMORE — a single-discipline mathematics project.
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2024 — present	Member, <i>Commissione Paritetica Docenti-Studenti</i> of the Dipartimento di Scienze Fisiche, Informatiche e Matematiche, UNIMORE — the department's joint staff–student committee for quality assurance, which monitors teaching provision and reports annually on the degree programmes in Mathematics, Physics and Computer Science.
2021–2022	Deputy Programme Director (student engagement and experience), Mathematics Department, Swansea University.
2020–2022	Final-year project coordinator, Mathematics Department, Swansea University.
Sept. 2015 — Sept. 2019	Assessment Officer, Department of Mathematics, Swansea University — responsible for all matters of examination: their preparation, and the coordination between colleagues and the external examiners who judge standards nationally. Chaired the boards deciding student progression on accumulated credit. From 2016/17, took part in the introduction and refinement of a digital system, on SharePoint, for sharing examination material among colleagues and with external examiners.
2013–2022	Library liaison, Mathematics Department, Swansea University.

LANGUAGES

Italian (native); English (C1); French (A1 written and spoken, C1 comprehension of scientific language).

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