

# Curriculum Vitae

## Andrea Poiatti

Dipartimento di Scienze Matematiche, Fisiche e Informatiche  
Università degli Studi di Parma  
Parco Area delle Scienze 53/a,  
43124 Parma (Italy)

Date and place of Birth: 02.10.1996, Bergamo, Italy  
Nationality: Italian  
Website: [sites.google.com/view/andrea-poiatti](https://sites.google.com/view/andrea-poiatti)  
e-mail: [andrea.poiatti @ unipr.it](mailto:andrea.poiatti@unipr.it)  
ORCID: [0009-0000-2217-742X](https://orcid.org/0009-0000-2217-742X)

## Positions

03/2026 - ongoing      Tenure Track Researcher (RTT), MATH-03/A,  
at Università degli Studi di Parma

03/2024 - 03/2026      **ESPRIT Project Leader** at University of Vienna.  
Mentor: Ulisse Stefanelli.  
Project title: *Geometry and phases on elastic-fluidic biomembranes*.

## Education

11/2020-02/2024      **PhD in Mathematical Models and Methods in Engineering**  
at Politecnico di Milano. Final mark: cum Laude  
Supervisor: Maurizio Grasselli.  
Discussion date: 08/02/2024.

10/2018–10/2020      **Master of Science in Mathematical Engineering**  
at Politecnico di Milano. Final mark: 110/110 cum Laude.

10/2015–09/2018      **Bachelor of Science in Mathematical Engineering**  
at Politecnico di Milano. Final mark: 110/110 cum Laude.

## Abilitations

29/10/2025 - 29/10/2037      **Italian National Abilitation - Associate Professor**  
Abilitazione Scientifica Nazionale: seconda fascia  
Settore Concorsuale 01/A3:  
Analisi Matematica, Probabilità e Statistica Matematica  
Valutazione: positiva all'unanimità

## Honors and awards

|         |                                                                                                                                                                                                                                  |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 05/2024 | <b><u>Alexander von Humboldt Research Fellowship</u></b> .<br>Academic host: <u>Professor Helmut Abels, University of Regensburg</u> .<br>Periods of stay: October-December 2024, April-June 2025.                               |
| 02/2024 | <b>Oberwolfach Leibniz Graduate Student (OWLG)</b> at the <u>Oberwolfach Workshop 2407 - Interfaces, Free Boundaries and Geometric Partial Differential Equations</u>                                                            |
| 10/2023 | <b>FWF ESPRIT</b> grant <u>ESP 552: Geometry and phases on elastic-fluidic biomembranes</u> . Duration: 36 months. Amount: 316,037 EUR.                                                                                          |
| 10/2023 | 3 months <b>Junior Research Fellowship</b> from the <u>Erwin Schrödinger International Institute for Mathematics and Physics at the University of Vienna</u><br>declined due to award of a FWF ESPRIT grant on a similar topic   |
| 03/2017 | <b>“Best freshman award”</b> for the academic year 2015-2016, <u>Politecnico di Milano</u> .                                                                                                                                     |
| 09/2015 | <b>“Alfiere del Lavoro”</b> , national excellence achievement in Gymnasium studies awarded by <u>National Federation of “Cavalieri del Lavoro”</u> jointly with the President of the Italian Republic <u>Sergio Mattarella</u> . |

## Research interests

- Well-posedness and longtime behavior of nonlinear PDEs
- Phase-field models of complex fluids (binary or multi-component) like Cahn-Hilliard and Allen-Cahn equations, and corresponding sharp interface limits
- Navier-Stokes equations
- Differential geometry of surfaces
- Geometric flows
- PDEs on evolving surfaces

## Publicly available link to a list of all published publications

<https://sites.google.com/view/andrea-poiatti/research/>

## Preprints

1. M. Grasselli, C. Hurm, and A. Poiatti, *Well-posedness and longtime behavior of the conserved Navier–Stokes–Allen–Cahn equations with unmatched viscosities and singular potential* (2026), submitted, [arXiv:2605.30921](#).
2. A. Miniguano-Trujillo, A. Poiatti, M. Grasselli, B. Goddard, and J. Pearson, *Singularities in phase separation models: a spectral element approach for the nonlocal Cahn–Hilliard equation* (2026), submitted, [arXiv:2604.19521](#).
3. M. Grasselli, B. Ouyang, A. Poiatti, and H. Wu, *The Cahn–Hilliard–Darcy–Forchheimer system with surfactant: Existence and long-time behavior of global weak solutions* (2026), submitted, [arXiv:2603.22172](#).

4. M. Grasselli. and A. Poiatti, *Asymptotic stabilization of weak solutions to phase-field equations with non-degenerate mobility and singular potential* (2026), [arXiv:2510.17296](#).
5. P. Knopf, A. Poiatti, J. Stange, S. Yayla, *Long-time dynamics of a bulk-surface convective Cahn–Hilliard system: Pullback attractors and convergence to equilibrium* (2026), submitted, [arXiv:2603.10923](#).
6. M. Grasselli. and A. Poiatti, *Convergence to equilibrium of weak solutions to the Cahn–Hilliard equation with non-degenerate mobility and singular potential* (2025), [arXiv:2510.17296](#).
7. C.G. Gal, M. Grasselli, A. Poiatti, and J.L. Shomberg, *Nonlocal coupling and mobility constraints in multi-component phase segregation: modeling, theory, and dynamics* (2025), Researchgate [doi:10.13140/RG.2.2.36014.98889](#).
8. H. Abels and A. Poiatti , *Weak Solutions to a Sharp Interface Model for a Two-Phase Flow of Incompressible Viscous Fluids with Different Densities* (2025), [arXiv:2505.06423](#).
9. C.G. Gal, M. Grasselli, A. Poiatti, and J.L. Shomberg, *Multi-component Cahn-Hilliard systems with singular potentials: numerical results and cascading phenomena* (2024), Researchgate [doi:10.13140/RG.2.2.12188.09601](#).

## Publications

1. H. Abels, A. Marveggio, and A. Poiatti, *Well-posedness and sharp interface limit of a non-isothermal Navier-Stokes/Allen-Cahn model* (2026), Math. Models Methods Appl. Sci., [doi:10.1142/S0218202526500466](#).
2. A. Poiatti and U. Stefanelli, *Long-Time behavior of the tangential surface Navier-Stokes equation* (2026), Nonlinear Anal. **271**, 114151, [doi:10.1016/j.na.2026.114151](#).
3. A. Poiatti, *Varifold solutions to Volume-Preserving Mean Curvature Flow: existence and weak-strong uniqueness* (2026), Math. Ann. **394**, 98, [doi:10.1007/s00208-026-03421-9](#).
4. C. Elbar and A. Poiatti, *Weak solutions and sharp interface limit of the anisotropic Cahn-Hilliard equation with disparate mobility and inhomogeneous potential* (2026), Interfaces Free Bound., online first, [doi:https://doi.org/10.4171/ifb/573](#).
5. D. Caetano, C.M. Elliott, M. Grasselli, and A. Poiatti, *Multi-component phase separation and small deformations of a spherical biomembrane* (2026), Calc. Var. Partial Differential Equations **65**, 72, [doi:10.1007/s00526-025-03243-8](#).
6. H. Abels, H. Garcke, and A. Poiatti, *Diffuse Interface Model for Two-Phase Flows on Evolving Surfaces with Different Densities: Global Well-Posedness* (2025), Calc. Var. Partial Differential Equations **64**, 141, [doi:10.1007/s00526-025-03001-w](#).
7. A. Poiatti, *The 3D strict separation property for the nonlocal Cahn-Hilliard equation with singular potential* (2025), Anal. PDE **18**(1), 109-139, [doi:10.2140/apde.2025.18.109](#).
8. H. Abels, H. Garcke, and A. Poiatti, *Diffuse Interface Model for Two-Phase Flows on Evolving Surfaces with Different Densities: Local Well-Posedness* (2026), J. Evol. Equ. **26**, 47, [doi:10.1007/s00028-025-01178-3](#).

9. N. Parolini, A. Poiatti, J. Vené, and M. Verani, *Structure-preserving neural networks in data-driven rheological models* (2025), SIAM J. Sci. Comput. **47**(1), [doi:10.1137/24M1631092](#).
10. C. Hurm, P. Knopf, and A. Poiatti, *Nonlocal-to-local convergence rates for strong solutions to a Navier-Stokes-Cahn-Hilliard system with singular potential* (2024), Comm. Partial Differential Equations **49**(9), 832-871, [doi:10.1080/03605302.2024.2401445](#).
11. C. Elbar, B. Perthame, A. Poiatti, and J. Skrzeczkowski, *Nonlocal Cahn-Hilliard equation with degenerate mobility: Incompressible limit and convergence to stationary states* (2023), Arch. Ration. Mech. Anal. **248**:41, [doi:10.1007/s00205-024-01990-0](#).
12. C.G. Gal and A. Poiatti, *Unified framework for the separation property in binary phase segregation processes with singular entropy densities* (2025), European J. Appl. Math. **36**, 40-67, [doi:10.1017/S0956792524000196](#).
13. H. Abels, H. Garcke, and A. Poiatti, *Mathematical Analysis of a Diffuse Interface Model for Multi-Phase Flows of Incompressible Viscous Fluids with Different Densities* (2024), J. Math. Fluid Mech. **26**, Paper No. 29, [doi:10.1007/s00021-024-00864-5](#).
14. A. Poiatti and A. Signori, *Regularity results and optimal velocity control of the convective nonlocal Cahn-Hilliard equation in 3D* (2024), ESAIM Control Optim. Calc. Var. **30**, Paper No. 21, 36pp., [doi:10.1051/cocv/2024007](#).
15. M. Grasselli and A. Poiatti, *Multi-component conserved Allen-Cahn equations* (2024), Interfaces Free Bound. **26**(4), 489-541, [doi:10.4171/IFB/513](#).
16. C.G. Gal, M. Grasselli, and A. Poiatti, *Allen-Cahn-Navier-Stokes-Voigt systems with moving contact lines* (2023), J. Math. Fluid Mech. **25**, Paper No. 89, 57 pp., [doi:10.1007/s00021-023-00829-0](#).
17. C.G. Gal, M. Grasselli, A. Poiatti, and J. Shomberg, *Multi-component Cahn-Hilliard systems with singular potentials: Theoretical results* (2023), Appl. Math. Optim. **88**(73), [doi:10.1007/s00245-023-10048-8](#).
18. D. Caetano, C.M. Elliott, M. Grasselli, and A. Poiatti, *Regularisation and separation for evolving surface Cahn-Hilliard equations* (2023), SIAM J. Math. Anal. **55**(6), 6625-6675, [doi:10.1137/22M1497213](#).
19. M. Grasselli and A. Poiatti, *A phase-field model for multiscale modeling of thrombus biomechanics in blood vessels: local well-posedness in dimension two* (2023), Discrete Contin. Dyn. Syst. Ser. S **16**(9), 2364-2425, 2023, [doi:10.3934/dcdss.2023105](#).
20. C.G. Gal, A. Giorgini, M. Grasselli, and A. Poiatti, *Global well-posedness and convergence to equilibrium for the Abels-Garcke-Grün model with nonlocal free energy* (2023), J. Math. Pures Appl. (9) **178**, 46-109, [doi:10.1016/j.matpur.2023.07.005](#).
21. M. Grasselli, N. Parolini, A. Poiatti, and M. Verani, *Non-isothermal non-Newtonian fluids: the stationary case* (2023), Math. Models Methods Appl. Sci. **33**(9), 1747-1801, [doi:10.1142/S0218202523500410](#).
22. M. Grasselli and A. Poiatti, *A phase separation model for binary fluids with hereditary viscosity* (2022), Math. Methods Appl. Sci. **45**(17):11031-11066, [doi:10.1002/mma.8436](#).

23. M. Grasselli and A. Poiatti, *The Cahn-Hilliard-Boussinesq system with singular potential* (2022), Commun. Math. Sci. **20**:897-946, [doi:10.4310/CMS.2022.v20.n4.a1](https://doi.org/10.4310/CMS.2022.v20.n4.a1).

## Reports

1. *Mathematics of phase separation on evolving surfaces*, with H. Abels, D. Caetano, C.M. Elliott, H. Garcke, and M. Grasselli, Oberwolfach Reports **21**(1):462-464, 2024, [doi:10.4171/OWR/2024/8](https://doi.org/10.4171/OWR/2024/8).

## Languages

|          |          |
|----------|----------|
| Italian: | Native   |
| English: | Level C1 |
| French:  | Level A2 |

## Visiting periods

- **Benoît Perthame**, Paris, [LJLL](https://www.ljll.jussieu.fr/), 7 October - 22 December, 2022
- **Helmut Abels** and **Harald Garcke**, [University of Regensburg](https://www.uni-regensburg.de/), 22 January - 12 February, 2023
- **Ulisse Stefanelli**, [University of Vienna](https://www.univie.ac.at/), 27 March - 2 April, 2023
- **Helmut Abels** and **Harald Garcke**, [University of Regensburg](https://www.uni-regensburg.de/), 9 November - 15 December, 2023
- **Alice Marvaggio**, Hausdorff Center for Mathematics, [University of Bonn](https://www.uni-bonn.de/), 3 June - 7 June 2024
- **Tim Laux**, [University of Heidelberg](https://www.uni-heidelberg.de/), 23 April - 30 April 2025; 25 June - 30 June 2025; 21 September - 27 September 2025
- **Charles Elbar**, Institut Camille Jordan, [Université Claude Bernard - Lyon 1](https://www.univ-lyon1.fr/), 7 September - 13 September 2025
- **Katharina Hopf**, [Weierstrass Institute for Applied Analysis and Stochastics](https://www.wiam.uni-berlin.de/), Berlin, Germany, 8 February - 13 February 2026

## Academic talks

- 04/2026 *A new notion of weak solution to a sharp interface model for a two-phase flow of incompressible viscous fluids with different densities and viscosities*, Analysis Seminar, Università degli Studi di Milano, Italy.
- 03/2026 *Convergence to equilibrium of weak solutions to the Cahn–Hilliard equation with non-degenerate mobility*, Conference on “Mathematical Fluid Mechanics and Related Topics” on the occasion of Reinhard Farwig’s 70th birthday, Regensburg, Germany.
- 02/2026 *A Navier-Stokes/Mullins-Sekerka system with different densities: weak solutions*, Langenbach-Seminar, WIAS Berlin.
- 11/2025 *Global weak solutions to a Navier-Stokes/Mullins-Sekerka system with different densities and viscosities*, ESI Workshop on *Geometric Variational Problems*, Vienna.
- 09/2025 *Weak varifold solutions to a Navier-Stokes/Mullins-Sekerka system with different densities*, Institut Camille Jordan, Université Claude Bernard - Lyon 1, France.
- 05/2025 *Weak solutions to a Navier-Stokes/Mullins-Sekerka system with different densities*, Graduate Seminar IntComSin, University of Regensburg.
- 04/2025 *Weak solutions to a Navier-Stokes/Mullins-Sekerka system*, Applied Analysis Seminar, University of Heidelberg.
- 03/2025 *Lipid rafts on biomembranes: modeling and analysis*, during the Aachen-Erlangen-Regensburg Young Mathematicians Meeting, University of Regensburg, Germany.
- 02/2025 *Lipid rafts on cell membranes: modeling and analysis*, during the EMS Tag Meeting, “Mixtures: Modeling, analysis and computing”, Prague.
- 11/2024 *Two-phase flows on evolving surfaces: modeling and analysis*, Oberseminar, University of Regensburg, Germany.
- 07/2024 *Two-phase flows on evolving surfaces: modeling and mathematics*, during the 2024 CIME School “Diffuse Interface methods in Continuum Mechanics: analysis, singular limits and algorithm”, Cetraro, Italy.
- 06/2024 *The strict separation property in phase-field models: advances and challenges*, [Oberseminar Analysis](#), University of Bonn, Germany.
- 05/2024 *“Multi-component systems: modeling and recent results”*, PDE Afternoon, University of Vienna, Austria.
- 04/2024 *“Strict separation property in phase-field models: where are we?”*, Conference: “The Cahn-Hilliard equation - recent advances and new challenges”, Checiny, Poland.
- 04/2024 *“The strict separation property in phase-field models”*, Calc.Var. seminar, Universität Wien - Fakultät für Mathematik, Austria.
- 03/2024 *“Mathematical analysis of phase separation on evolving surfaces”*, GAMM conference, Magdeburg, Germany.

- 02/2024 “Phase separation on evolving surfaces: Mathematical Analysis”, during the INdAM Workshop *Cahn-Hilliard and Allen-Cahn Equations in Biomedicine*, Politecnico di Milano, Italy.
- 02/2024 Oberwolfach Leibniz Graduate Student at the Oberwolfach Workshop 2407 - Interfaces, Free Boundaries and Geometric Partial Differential Equations.
- 11/2023 *Phase separation on evolving surfaces*, during *Vector- and Tensor-Valued Surface PDEs* international workshop, Dresden, Germany, 2023.
- 11/2023 IntComSin Colloquium: *Mathematics of diffuse interface models for multiphase flows*, University of Regensburg, Germany.
- 06/2023 “Regularisation and separation for evolving surface Cahn-Hilliard equations”, GAMM conference, Dresden, Germany.
- 03/2023 “Mathematical analysis of multi-component phase-field models”, Calc.Var. seminar, Universität Wien - Fakultät für Mathematik, invited by Ulisse Stefanelli.
- 03/2023 “Mathematical analysis of multi-component phase-field models”, University of Pavia, Italy, invited by the “Computational Mechanics & Advanced Materials” group together with Elisabetta Rocca.
- 02/2023 “Mathematical analysis of phase-field models”, University of Regensburg, Germany.
- 12/2022 “Mathematical analysis of phase-field models”, PhD Students’ seminar, LJLL, Sorbonne Université, Paris, France.
- 10/2022 “Mathematical models of complex fluids on an evolving surface: biological applications, results and perspectives”, during the “Modelling cell and tissue biomechanics Workshop”, LJLL, Sorbonne Université, Paris, France.
- 08/2022 “Phase separation on evolving surfaces”, during the School “Surfaces 2022”, Frauenwörth abbey, Bavaria, Germany.
- 06/2022 “Regularisation and separation for evolving surface Cahn-Hilliard equations”, poster presentation during the School “Mathematical Models for Bio-Medical Sciences”, Como, Italy.



## Workshops/Conferences organization

- 12/2026 - Forthcoming     Organizer, together with Charles M. Elliott, Danielle Hilhorst, Maurizio Grasselli, Benoît Perthame, and Lara Trussardi, of the Workshop with title *Mathematical Analysis of Interfaces in Cell Biology*, funded by the *Erwin Schrödinger International Institute for Mathematics and Physics (ESI)* (€12,000), taking place at ESI Institute in Vienna, December 14-18, 2026.
- 09/2026 - Forthcoming     Organizer, together with Charles Elbar, of the Minisymposium *Free Boundaries in Biology*, during the 17th International Conference on Free Boundary Problems: Theory and Applications 2026 (FBP 2026), Berlin, September 7-11, 2026.
- 07/2026 - Forthcoming     Organizer, together with Helmut Abels and Harald Garcke, of the Special Session *Phase-field models and their singular limits* during the 15th AIMS Conference in Athens, July 6-10, 2026.
- 02/2026                     Organizer of the Workshop *Phase separation in Vienna: from modeling to theory*, University of Vienna, financed by the FWF Project ESP552 (PI: Andrea Poiatti), February 24-27, 2026.
- 05/2022                     Local organizer of the INdAM Workshop “PHAME 2022 - Phase Field Methods in Applied Sciences”, Rome, Italy.

## Teaching experience

- 03/2026-06/2026             Teaching Assistant (10 hours Lectures, 12 hours Exercise Sessions) for *Mathematical Analysis 1* for the B.Sc. in Mathematics and Physics (Università degli Studi di Parma)
- 11/2025-02/2026             Responsible for the course *250139 UE Introduction to Analysis (2025W)* at the University of Vienna
- 06/2025                     Lecturer for the PhD Mini-Course *An introduction to singular limits in phase separation: From diffuse to sharp interface* at the Vienna School of Mathematics (University of Vienna)
- 02/2023-05/2023             Teaching Assistant for *Mathematical Analysis 2* (Politecnico di Milano)
- 02/2022-05/2022             Teaching Assistant for *Mathematical Analysis 2* (Politecnico di Milano)
- 02/2021-06/2021             Teaching Assistant for *Mathematical Analysis 2* (Politecnico di Milano)
- 01/2021-09/2021             Tutor for the course *Real and Functional Analysis* (Politecnico di Milano)

## Reviewing Activities

Peer reviews for:

*Advances in Differential Equations*;

*Applicable Analysis*;

*Applied Mathematics and Optimization*;



*Communications on Pure and Applied Analysis*;  
*Computer Methods in Applied Mechanics and Engineering*;  
*Discrete and Continuous Dynamical Systems Series B*;  
*Discrete and Continuous Dynamical Systems Series S*;  
*European Journal of Applied Mathematics*;  
*Interfaces and Free Boundaries*;  
*Journal of Dynamical and Control Systems*;  
*Journal of Evolution Equations*;  
*Journal of Functional Analysis*;  
*Journal of Mathematical Analysis and Applications*;  
*Journal of Mathematical Fluid Mechanics*;  
*Mathematical Methods in the Applied Sciences*;  
*Mathematical Models and Methods in Applied Sciences*;  
*Mathematische Nachrichten*;  
*Nonlinearity*;  
*Potential Analysis*;  
*Proceedings of the Royal Society A*;  
*Proceedings of the Royal Society of Edinburgh (Section A: Mathematics)*;  
*SIAM Journal on Mathematical Analysis*;  
*Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM)*;  
*Zeitschrift für angewandte Mathematik und Physik (ZAMP)*.

June 30, 2026