Matías G. Delgadino

Curriculum Vitae

Employment

2020-Present **Hooke Research Fellow**, *University of Oxford*, Oxford, England.

2019-Present **Proffessor Adjunto**, *PUC*, Rio de Janeiro, Brazil.
(On Leave)

Post-Doctoral Experience

2017-2019 **Postdoctoral position**, *Imperial College*, London, England.
Mentors: Prof. J.A. Carrillo & Prof. G. A. Pavliotis

2016-2017 **Postdoctoral position**, *ICTP*, Trieste, Italy.
Mentor: Prof. Francesco Maggi

November 2016 **Postdoctoral position**, *Mittag-Leffler Institute*, Stockholm, Sweden.

Education

2011-2016 **PhD. in Applied Mathematics and Scientific Computing**, *University of Maryland*, College Park, Maryland.
Thesis: Analysis of Self-organization; Adviser: Prof. Antoine Mellet

2006-2011 **Degree in Mathematics**, *Universidad Nacional de Córdoba, Facultad de Matematica, Astronomia Y Fisica*, Córdoba, Argentina.
Thesis: Control theory, applied in chemotherapy treatments Adviser: Prof. Andres Barrea

Fellowhips and Grants

2020-2021 **Young Scientist Support**, *Instituto Serrapilheira*, R$ 100K.

2020-2023 **Bolsas de Produtividade em Pesquisa**, *Research incentive*, CNPq, R$ 40K.

2018 **Research Impulse Grant**, *Travel support*, Imperial College.

2013 **Summer Research Fellowship**, *Support to doctoral students at "mid-career"*, University of Maryland at College Park.

2013 **Patrick and Marguerite Sung Fellowship**, *Support for Graduate Student*, Mathematics Department, University of Maryland at College Park.

2011 **John Osborne Fellowship**, *Recognition for outstanding academic accomplishments*, Mathematics Department, University of Maryland at College Park.

2010 **Inter-U**, *Universidad de Buenos Aires*, Buenos Aires, Argentina.
Exchange program for undergraduate students.

2010 **Summer Program Fellowship**, *IMPA*, Rio de Janeiro, Brazil.

Consultancy Roles

2020 **Part-time researcher in Research and Development**, *Petrobras*.

Service

2019 **ICIAM Minisymposium Organizer**, *ICIAM*, Valencia, Spain.

2019 **ICTP 1st Latin American School in Applied Mathematics Co-Organizer**, *UFSQ*, Quito, Ecuador. Budget €20K.
Highlights: `https://www.youtube.com/watch?v=GpmSgL35Lcw`

2016-2017 **Mathematics Seminar organizer**, *ICTP*, Trieste, Italy.

Articles

[13] J.A. Carrillo, M.G. Delgadino, L. Desvillettes, J. Wu, The Landau equation as a Gradient Flow, Submitted 2020.

[12] M.G. Delgadino, R. S. Gvalani, G.A. Pavliotis, On the diffusive-mean field limit for weakly interacting diffusions exhibiting phase transitions, Submitted 2020.

[11] M.G. Delgadino, X. Yan, Y. Yao, Uniqueness and non-uniqueness of steady states of aggregation-diffusion equations, To appear Comm. Pure Appl. Math. 2020.

[10] J.A. Carrillo, M.G. Delgadino, G.A. Pavliotis, A proof of the mean-field limit for lambda-convex potentials by Gamma-convergence, To appear in J. Functional Analysis 2019.

[9] M.G. Delgadino, A. Mellet, On the relationship between the thin film equation and Tanner's law, To appear Comm. Pure Appl. Math. 2019.

[8] J.A. Carrillo, M.G. Delgadino, J. Dolbeault, R.L. Frank, F. Hoffmann, Reverse Hardy-Littlewood-Sobolev inequalities, JMPA 2019.

[7] M. Coti-Zelati, M.G. Delgadino, T.M. Elgindi, On the relation between enhanced dissipation time-scales and mixing rates. Comm. Pure Appl. Math. 2018.

[6] J.A. Carrillo, M.G. Delgadino, F. S. Patacchini, Existence of ground states for aggregation-diffusion equations, Anal. Appl 2018.

[5] M.G. Delgadino, F. Maggi, Alexandrov Theorem revisited, Anal. & PDE. 2019.

[4] M.G. Delgadino, F. Maggi, C. Mihaila, R. Neumayer, Bubbling with L^2-almost constant mean curvature and an Alexandrov-type theorem for crystals, Arch. Ration. Mech. Anal. 2018.

[3] M.G. Delgadino, S. Smith, Hölder estimates for fractional parabolic equations with critical divergence free drifts, Ann. Ins. Henri Poincare (C) 2017.

[2] M.G. Delgadino, Convergence of the one-dimensional Cahn-Hilliard equation with degenerate mobility, SIAM journal of Mathematical Analysis 2018.

[1] J.A. Carrillo, M.G. Delgadino, A. Mellet, Regularity of local minimizers of the interaction energy via obstacle problems, Comm. Math. Phys. 2016.

Outreach

2017 **Hearing the self: A Spectral Experience**, *ICMC*, Shanghai, China.
https://github.com/fdch/specexp

Ph.D. Students

2018-Present **Jeremy Wu**, *Doctoral Student*, Imperial College, Co-advising with Prof. Carrillo.

Master Students

2020- **Bruno Suassuna**, *Master Student*, PUC-Rio de Janeiro.

2018-2019 **Ryan Bouab**, *Master Student*, Imperial College, Co-advisor with Prof. Carrillo.

2018-2019 **Maxcence de Rochechouart**, *Master Student*, Imperial College, Co-advisor with Dr. Kalise.

2017-2018 **Yujian Liu**, *Masters Student*, Imperial College, Co-advisor with Prof. Carrillo.

Undergraduate Students

2019-2020 **Humberto Seghetto**, *PUC-Rio de Janeiro.*

2016 **Clara Bryant**, *University of Maryland.*

Teaching Experience

2019-Present **Proffessor**, *Mathematics Department*, PUC-RIO.

- Functional Analysis, 2020
- Probability, 2020
- Introduction to Optimal Transport, 2019

2018-2019 **Lecturer**, *Mathematics Department*, Imperial College, Introduction to PDEs.

2016-2017 **Teaching Assistant**, *Mathematics Section*, International Center for Theoretical Physics, Diploma program tutorials in Analysis and PDEs.

2011-2016 **Teaching Assistant/Grader**, *Mathematics Department*, University of Maryland at College park, Teaching Assistant of Linear Algebra, Differential Equations and twice Linear Algebra for Engineers; Grader of Real Analysis I and II, PDE I, Finite Elements for time dependent PDEs.

2009-2010 **Teaching Assistant**, *Mathematics Department*, Universidad Nacional de Cordoba, Teaching Assistant of Analysis I, Analysis II and Discrete Mathematics.

Teaching development

October 2018 **Introduction to Making Teaching More Inclusive**, *Imperial College*, London, England.