

EMPLOYMENT

- Jan 2021–present: **University of Vienna (Austria)**
Principal Investigator of the project “*Mathematical models to study toxicity effects on vegetation*” (FWF Firnberg-Programm T 1199)
- Nov 2019–Dec 2020: **Radon Institute for Computational and Applied Mathematics (Austria)**
Postdoctoral Researcher in the group of Dr. Marie-Therese Wolfram
- Mar 2017–Oct 2019: **Vienna University of Technology (Austria)**
Scientific Manager of the Doctoral School (DK) “*Dissipation and Dispersion in Nonlinear PDEs*”

EDUCATION

- 2014–2018: **Vienna University of Technology (Austria)**
Ph.D in Mathematics (with Distinction), Viva date: 24 January 2018
“*Geometric analysis of multi-scale solutions in regularized models of microstructures and touchdown phenomena in MEMS*”
Advisor: Peter Szmolyan
- 2011–2013: **University of Naples Federico II (Italy)**
Master Degree in Mathematics (110/110 cum Laude)
“*Mathematical Models for Vegetation Pattern Formation*”
Advisors: Addolorata Marasco and Francesco Giannino
- 2007–2011: **University of Naples Federico II (Italy)**
Bachelor Degree in Mathematics (110/110 cum Laude)
“*On nonparametric inference statistical methods: The Wilcoxon Test*”
Advisor: Maria Longobardi

ACADEMIC HONOURS AND AWARDS

- 2020: **Hertha Firnberg Postdoctoral Fellowship** (243.K€)
- 2019: **Christiana Hörbiger Award**, travel grant (5.K€)
- 2018: **Christiana Hörbiger Award**, travel grant (1.1K€)

ADDITIONAL FUNDING

- 2020: **ICMS Early-Career Workshop** (with E. Daus, C. Soresina, A. Manhart), Edinburgh, UK (2021)
- 2019: **Hausdorff School** (with E. Daus, C. Soresina), Bonn, Germany (2021)

PUBLICATIONS

- [1] A. Marasco, F. Giannino, A. Iuorio. *Modelling competitive interactions and plant-soil feedback in vegetation dynamics*. Ricerche mat., 2020, <https://doi.org/10.1007/s11587-020-00497-6>.
- [2] A. Iuorio, N. Popović, and P. Szmolyan. *Singular perturbation analysis of a regularized MEMS model*. SIAM J. Appl. Dyn. Syst. (SIADS), 18(2):661–708, 2019, <https://doi.org/10.1137/18M1197552>.
- [3] A. Iuorio and S. Melchionna. *Long-time behavior of a nonlocal Cahn-Hilliard equation with reaction*. Discrete Contin. Dyn. Syst., 38(8):3765–3788, 2018, <https://doi.org/10.3934/dcds.2018163>.

- [4] A. Iuorio, C. Kuehn, and P. Szmolyan. *Geometry and numerical continuation of multiscale orbits in a nonconvex variational problem*. Discrete Contin. Dyn. Syst. Ser. S, <https://doi.org/10.3934/dcdss.2020073>.
- [5] A. Marasco, A. Iuorio, F. Cartenì, G. Bonanomi, D.M. Tartakovsky, S. Mazzoleni, and F. Giannino. *Vegetation pattern formation due to interactions between water availability and toxicity in plant-soil feedback*. Bull. Math. Biol., 76(11):2866–2883, 2014, <https://doi.org/10.1007/s11538-014-0036-6>.
- [6] A. Marasco, A. Iuorio, F. Cartenì, G. Bonanomi, F. Giannino, and S. Mazzoleni. *Water limitation and negative plant-soil feedback explain vegetation patterns along rainfall gradient*. Procedia Environ. Sci., 19: 139–147, 2013, <https://doi.org/10.1016/j.proenv.2013.06.016>.

PREPRINTS

- [1] A. Iuorio, F. Veerman. *The influence of autotoxicity on the dynamics of vegetation spots*. 2020, <https://doi.org/10.1101/2020.07.29.226522>.
- [2] A. Iuorio, G. Jankowiak, P. Szmolyan, M.T. Wolfram. *A PDE model for unidirectional flows: stationary profiles and asymptotic behaviour*. 2020, <https://arxiv.org/abs/2010.14424>.

RESEARCH VISITS

Jul 2019 & Jan 2019: **Heidelberg University (Germany)**, collaboration with Frits Veerman
 Jul 2019: **University of Rostock (Germany)**, collaboration with Jens Starke
 Jun 2018: **TU Munich (Germany)**, collaboration with Christian Kuehn
 May 2018 & Sep-Dec 2016: **The University of Edinburgh (UK)**, collaboration with Nikola Popović

SEMINAR TALKS

Jan 2020: *Applied Math Seminar*, University of Warwick, UK
 Nov 2019: *Seminar on Qualitative Theory of Differential Equations*, Comenius University Bratislava, Slovakia
 Sep 2019: *Analysis Seminar*, University of Graz, Austria
 Aug 2019: *Applied and Interdisciplinary Mathematics Seminar*, University of Bath, UK
 Jul 2019: *GSPT Seminar*, Heidelberg University, Germany
 Jul 2019: *Mathematisches Forschungskolloquium*, University of Rostock, Germany
 Mar 2019: *Mathematisches Forschungskolloquium*, University of Rostock, Germany
 Jan 2019: *Applied Analysis Seminar*, Heidelberg University, Germany
 Jun 2018: *Oberseminar*, Technical University of Munich, Germany
 Sep 2016: *PG (Post-Graduate) Colloquium*, The University of Edinburgh, UK
 Sep 2016: *Applied and Computational Mathematics (ACM) Seminar*, The University of Edinburgh, UK

CONFERENCES & WORKSHOPS

Aug 2020: *SMB 2020 Annual Meeting, e-Conference (Contributed talk)*.
 Aug 2020: *European Conference on Mathematical Biology (ECMTB) 2020*, Heidelberg, Germany **(Poster Presentation) (postponed)**
 Aug 2020: *Dynamics Days Europe*, Nice, France **(Invited Speaker) (postponed)**
 Feb 2020: *11th Workshop on Dynamical Systems Applied to Biology and Natural Sciences (DSABNS2020)*, Trento, Italy **(Contributed Talk)**
 Jan 2020: *PDE-MANS 2020*, Granada, Spain **(Poster Presentation)**
 Sep 2019: *Workshop “On growth and pattern formation”*, Oxford, UK **(Poster Presentation)**
 Jul 2019: *Edinburgh Slow-Fast-Ival*, Edinburgh, UK **(Invited Speaker)**
 May 2019: *SIAM Conference on Applications of Dynamical Systems (DS19)*, Snowbird, Utah, USA **(Invited Speaker)**

- Mar 2019: *GFS follow on: Mathematics of form in active and inactive media*, Cambridge, UK
(Invited Speaker)
- Feb 2019: *First International Nonlinear Dynamics Conference (NODYCON2019)*, Rome, Italy
(Contributed Talk)
- Feb 2019: *10th Workshop on Dynamical Systems Applied to Biology and Natural Sciences (DSABNS2019)*, Naples, Italy (Contributed Talk)
- Jul 2018: *European Conference on Mathematical Biology (ECMTB) 2018*, Lisbon, Portugal
(Invited Speaker)
- Jun 2017: *9th European Nonlinear Dynamics Conference (ENOC)*, Budapest, Hungary
(Invited Speaker)
- Jul 2016: *European Conference on Mathematical Biology (ECMTB) 2016*, Nottingham, UK
- Jun 2016: *Vienna young Scientist Symposium*, Vienna, Austria (Contributed Talk)
- Jul 2015: *Equadiff 2015*, Lyon, France (Contributed Talk)
- Jun 2013: *Four decades of progress in monitoring and modeling of processes in the soil-plant-atmosphere system: applications and challenges*, Naples, Italy
(Contributed Talk)

RESEARCH SCHOOLS

- Mar 2020: *DK Winter School "Dissipation and Dispersion in Nonlinear PDEs"*, Baden, Austria
(Invited Speaker) (postponed)
- Apr 2019: *LMS-CMI Research School "PDEs in Mathematical Biology: Modelling and Analysis"*,
Edinburgh, UK (Poster Presentation)
- Nov 2015: *1st CENTRAL School on Analysis and Numerics for Partial Differential Equations*,
Vienna, Austria
- Sep 2014: *Summer School "Analysis and Applications of Partial Differential Equations"*,
Graz, Austria

OUTREACH EVENTS

- Dec 2016: *Edinburgh Maths Circle*, The University of Edinburgh, UK
- Nov 2016: Outreach event at *Flora Stevenson Primary School*, Edinburgh, UK

ACADEMIC SERVICES

- 2017-present: **Organiser of Scientific Events**
- 2020:
- ICMS Early-Career Workshop "*Diffusive Systems: pattern formation, bifurcations, and biological applications*", Edinburgh, UK (tbh in 2021)
 - Mini-symposium "*Multi-scale phenomena in biology: modelling and analysis*"
at ECMTB 2020, Heidelberg, Germany (postponed)
- 2019: Hausdorff School "*Diffusive Systems: pattern formation, bifurcations, and biological applications*", Bonn, Germany (tbh in 2021)
- 2017-2019: DK Winter & Summer Schools
- Seminar *PDE Afternoon*
- Jun 2019: Workshop *Women in PDEs @ Vienna*, Austria
- Nov 2016: Workshop *Nonlinear PDEs & Gradient Flows: Analytical and Numerical Aspects*,
Vienna, Austria

2018-present: **Journal Referee**

Physica D: Nonlinear Phenomena
Journal of Mathematical Biology
Mathematical Biosciences
International Journal of Bifurcations and Chaos
IEEE Control Systems
Mathematical Modelling of Natural Phenomena
Mathematical Problems in Engineering
Ricerche di Matematica

SCIENTIFIC TRAINING

Jan 2017: Proposal writing
Jan 2016: Career planning
Jan 2015: Scientific writing
Jan 2014: Presentation techniques

WORK EXPERIENCE

2012-2014: **Book Reviser** for *Editorial Group SIMONE*, Italy
2013-2014: **Scientific Reviser** for *Progetto Matematika*, Italy

MEMBERSHIPS

Jul 2019–present: *European Women in Mathematics (EWM)*
Feb 2019–present: *European Society for Mathematical and Theoretical Biology (ESMTB)*
May 2019–Apr 2020: *Society for Applied and Industrial Mathematics (SIAM)*

LANGUAGES

Italian, mother tongue
English, fluent
German, fluent