CHIARA VILLA

Mathematical Biology PhD candidate interested in a career in Academia

Email	cv23@st-andrews.ac.uk
Website	http://www.mcs.st-and.ac.uk/∼cv23/
Languages	Italian (native), English (C2), French (B1)
Programming	MATLAB, Python, LaTeX, Fortran90, COMSOL, Maple, R, HTML5

EDUCATION

09/18 - Present	**Phd, Mathematics**, *University of St Andrews*, St Andrews (UK) Expected end date: 01/22-06/22 Supervisors: Prof Mark Chaplain, Dr Tommaso Lorenzi Funding awarded by the School of Mathematics and Statistics (£49124.25) Scottish Mathematical Sciences Training Center (Graduate courses)
2014 - 2018	**MMaths, Applied Mathematics**, *University of St Andrews*, St Andrews (UK) Fast Track, First Class Honours awarded. Academic Prizes: Dean's list (2014-2018), The Principal's Scholarship for Academic Excellence (£1000)
Summer 2017	Undergraduate Summer Research Internship (*University of St Andrews*)
Summer 2016	Complex Systems Biology Research Internship (*Università degli Studi di Torino*)

RESEARCH INTERESTS AND PUBLICATIONS

I am interested in mathematical modelling of cell populations to study problems in development (vasculogenesis) and cancer (intratumour phenotypic heterogeneity). I have been focussing on macroscopic, continuous, deterministic models of time- and space-dependent population dynamics, sometimes with additional phenotypic structure, which translate mathematically into systems of non-linear, non-local partial differential equations.

5. C. Villa, A. Gerisch, M.A.J. Chaplain, A mathematical model of endothelial progenitor cell cluster formation during the early stages of vasculogenesis, preprint arXiv:2105.11221, 2021
4. C. Villa, M.A.J. Chaplain, A. Gerisch, T. Lorenzi, Mechanical models of pattern and form in biological tissues: the role of stress-strain constitutive equations, **Bulletin of Mathematical Biology**, 83:80, 2021
3. C. Villa, M.A.J. Chaplain, T. Lorenzi, Evolutionary dynamics in vascularised tumours under chemotherapy: Mathematical modelling, asymptotic analysis and numerical simulations, **Vietnam Journal of Mathematics**, 49, 143–167, 2021
2. C. Villa, M.A.J. Chaplain, T. Lorenzi, Modelling phenotypic heterogeneity in vascularised tumours, **SIAM Journal on Applied Mathematics**, 81, 434–453, 2021
1. T. Lorenzi, F.R. Macfarlane, C. Villa, Discrete and continuum models for the evolutionary and spatial dynamics of cancer: a very short introduction through two case studies, (pp. 359-380) in **Trends in Biomathematics: Modeling Cells, Flows, Epidemics, and the Environment**, Ed. R. Mondaini, Springer, Cham, 2019

PROFESSIONAL RESPONSIBILITIES AND OUTREACH

**School of Mathematics and Statistics, University of St Andrews*

09/20 - today	**StAMBio seminars organiser***, Weekly talks by internal and guest speakers, online
09/18 - today	**Mentor in Peer Mentoring scheme***
03/21 - 04/21	**Journal Peer Reviewer**, *Frontiers in Ecology and Evolution*
11/20	**Piscopia Society***, PhD testimonial to promote equality and diversity in STEM
09/18 - 09/19	**PGR Rep & PGR Exec Rep***
09/18 - 09/19	**UoSA Student Rep**, *Scottish Mathematical Sciences Training Center*
11/18	**Outreach event organiser***, 'MT234 Research and Party'

SELECTED CONFERENCES, WORKSHOPS AND FORUMS

Selected meetings in which I presented my research in the form of a talk/poster (talk details on my website)

Jun 2021	**SoftMech Workshop** *University of St Andrews*, Online
May 2021	**Mathematical Biology on the Mediterranean Coast (Invited speaker)** *Sorbonne University (LJLL)*, Online
Apr 2021	**Mathematical Population Dynamics, Ecology and Evolution** *CIRM*, Online
Aug 2020	**Society for Mathematical Biology** Online conference, Awarded SMBdevBio Poster Prize 1 ($250)
Jun 2020	**Interplay between Oncology, Mathematics and Numerics (Invited speaker)** *Sorbonne University (LJLL), Inserm, University of Poitiers*, Online conference
Dec 2019	**Scottish Mathematical Biology Forum (Invited speaker)** *Maxwell Institute for Mathematical Sciences*, Edinburgh
May 2019	**EMS Postgraduate Meeting** *Edinburgh Mathematical Society*, The Burn House, Edzell
May 2019	**Research School: PDEs in Mathematical Biology: Modelling and Analysis** *London Mathematical Society & Clay Mathematics Institute*, ICMS, Edinburgh
Apr 2019	**British Applied Mathematics Colloquium** *University of Bath*, Bath

Other conferences and yearly recurrent meetings attended.

Apr 2021	**British Applied Mathematics Colloquium** *University of Glasgow*, Online
2019-2021	**Postgraduate Interdisciplinary Mathematics Symposium (2020 Organiser)** *School of Mathematics and Statistics*, The Burn House, Edzell (Online in 2021)
2019-2021	**School of Mathematics and Statistics Research Day** *School of Mathematics and Statistics*, St Andrews (Online in 2021)
Aug 2020	**Society for Mathematical Biology & European Society for Mathematical and Theoretical Biology (Minisymposium invited speaker)** Cancelled due to COVID-19, LMS ECR Travel Grant awarded (£500)
Nov 2019	**Modeling, analysis and simulation** – 50 years of Laboratoire Jacques-Louis Lions *Sorbonne University*, Paris
May 2019	**Computational Approaches in Mathematical Biology** *University of Dundee*, Dundee
Dec 2018	**Scottish Mathematical Biology Forum** *Maxwell Institute for Mathematical Sciences*, Edinburgh

TEACHING

All available student feedback data is included and reported on a scale of 1 (excellent) to 5 (poor) in the categories of Explanation (E), Organisation (O) and Availability (A).

Autumn 2020	**MT2000 Computing Workshop**, *Demonstrator, University of St Andrews*
Autumn 2019	**MT2000 Computing Workshop**, *Demonstrator, University of St Andrews*
Autumn 2019	**MT2501 Linear Mathematics**, *Tutor, University of St Andrews* E=1.44, O=1.33, A=1.33
Spring 2019	**MT2507 Mathematical Modelling**, *Tutor/Demonstrator, University of St Andrews* E=1.45, O=1.85, A=1.45
Autumn 2018	**MT2503 Multivariate Calculus**, *Tutor, University of St Andrews* E=1.17, O=1.5, A=1.17