CURRICULUM VITAE: KEVIN JOHN PAINTER

DATE OF BIRTH: 1st July 1973

CONTACT INFORMATION

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ResearcherID: http://www.researcherid.com/rid/D-1055-2010
Google Scholar: http://tinyurl.com/kjpainterscholar

EMPLOYMENT AND EDUCATION

10/20 to xx/yy:	Professore Ordinario (Full Professor), Politecnico di Torino, Italy.
08/17 to 09/20:	Professor in Mathematics (Full Professor), Heriot-Watt University, UK.
08/10 to 07/17:	Associate Professor and Reader in Mathematics, Heriot-Watt University, UK.
08/08 to 07/10:	Senior Lecturer (Associate Professor) in Mathematics, Heriot-Watt University, UK.
09/00 to 07/08:	Lecturer (Assistant Professor) in Mathematics, Heriot-Watt University, UK.
03/00 to 08/00:	Post Doctoral Research Associate, Heriot-Watt University, UK.
04/98 to 03/00:	Post Doctorial Research Associate, Universities of Utah/Minnesota, USA.
10/94 to 03/98:	Doctor of Philosophy (Mathematics), Brasenose College, University of Oxford, UK. Thesis title: "*Chemotaxis as a mechanism for morphogenesis*". Supervisor: Professor Philip K. Maini.
10/91 to 06/94:	Batchelor of Science Honours (1st Class) in Applied Mathematics, University of Warwick, UK. *Awarded IMA prize for best performance in final year project.*
09/84 to 07/91:	Tring Comprehensive School, Tring, Hertfordshire, UK.

RESEARCH SYNOPSIS

My research involves formulating, analysing and applying mathematical models to processes in biology. I develop targeted models aimed at tackling specific problems in areas including cell biology, developmental biology, physiology, cancer growth and ecology. I also explore more theoretically motivated models that can be adapted to different applications. I collaborate extensively with a range of scientists, including specialist theoretical and numerical analysts and experimental scientists, at both national and international levels.

FUNDING, FELLOWSHIPS AND AWARDS

- Conference “Collective Movement and Pattern Formation: Biology, Modelling and Analysis”, supported with grants of **19,000 GBP** from International Centre for Mathematical Sciences, **2,000 USD** from Society for Mathematical Biology, **2,000 EUR** from European Society for Mathematical and Theoretical Biology, **5,400 GBP** from London Mathematical Society. Awarded to **K.J. Painter**, M. Ptashynk, S. Sonner and M. Winkler. July 2026.
- Funding for “Variety Is the Spice of Life: The Mathematics of Biological Heterogeneity”, Australian Research Council grant DP250100477, S. T. Johnston (University of Melbourne) and K.J. Painter, 2025-2028.
- Funding for Research School “PDEs in Mathematical Biology: Modelling and Analysis.”, May 2019. Awards of **17,000 GBP** from London Mathematical Society, **5,000 USD** from Clay Mathematics Institute and **3,000 GBP** from Glasgow Mathematics Journal Trust. M. Ptashnyk and **K.J. Painter**.
- Edinburgh Mathematical Society Research Fund. Grant for short term academic research visit of Professor Thomas Hillen. Awarded **600 GBP**.
- Visiting Professorship, 2016-2017, Awarded by Politecnico di Torino, Italy. **K.J. Painter**. Amounts to one year of academic salary, **73,200 EUR**.
- R. Erban M. Chaplain, B. Leimkuhler, Y. Kevrekidis, **K. J. Painter. “**Multiscale methods for stochastic dynamical systems in biology: numerical methods, mathematical analysis, and biological models”. International Centre for Mathematical Science (ICMS) workshop. Awarded April 2015, **12,800 GBP**.
- D.J. Headon and **K.J. Painter (co-PI)**. “Parameterisation of developmental networks to understand periodic patterning.” BBSRC, BB/J017124/1. 2012-2015. Local component awarded to KJP, **45,510 GBP**.
- J.A. Sherratt and **K.J. Painter**. “Mathematical modelling of epithelial wound healing.” Heriot-Watt University Global Platform Scholarship. Funded a 36 month PhD scholarship, 2013-2015.
- J. West, M.P. Collinson and **K.J. Painter (co-PI). “**An integrated experimental and theoretical approach to understand corneal epithelial maintenance.” BBSRC BB/J015940/1. 2013-2015. Local component award **32,418 GBP**.
- **K.J. Painter (PI)**. “Mathematical Modelling of Embryonic Development. Leverhulme Trust Research Fellowship RF-2011-045. 2011-2013. 50% of teaching time for 2 years. **38,174 GBP**.
- A. Millar and 9 others, **including K.J. Painter (co-I)**. BBSRC BB/D019621/1 ``Centre for Systems Biology'', 2007-2012. **Total grant: 8,695,631 GBP**. Heriot-Watt component**: 38,245 GBP**.
- N. Bourneveas, B. Perthame and **K.J. Painter** CANPDE funded Workshop on “PDEs in Mathematical Biology”. September 2011**. 17,000 GBP**.
- N. Bourneveas, B. Perthame and **K.J. Painter** CANPDE funded Instructional Conference and Workshop on “Nonlinear PDEs in Mathematical Biology: Cell Migration and Tissue Mechanics”. 14th-21st April 2010, ICMS. **35,000 GBP**.
- Mathematical Biosciences Institute (MBI) “Long-term Visitor” (September-December 2008, Mathematical Challenges in Developmental Biology program). MBI funded teaching replacement*:* **11,325 GBP**.
- T.S. Deisboeck and 16 others, including **K.J. Painter**. United States National Institute of Health I-P20-CA11300-01, ``Development of a Virtual Tumour'', 2004-2009. **Total: 2,406,268 USD**. Heriot-Watt component: **72,900 USD**.

- Royal Society Travel Grant. 2004. **£700**

VISITING PROFESSORSHIPS AND PRIZES

- Programme Visitor, Isaac Newton Institute (INI), Cambridge, UK, 31/07-13/08, 2023. Part of the *"Mathematics of movement: an interdisciplinary approach to mutual challenges in animal ecology and cell biology"* programme
- Visiting Professor, Scuola Normale Superiore, Pisa, Italy, 11/06-15/06, 2018.
- Visiting Professor, Department of Mathematics, Politecnico di Torino, Italy, October 2016 – September 2017.
- Visiting Academic, Department of Mathematics, University of Alberta, Edmonton. (5 times, each of a period covering 1-4 weeks: 2017, 2010, 2006, 2005, 2001. *In 2017 this was supported by a Pacific Institute for Mathematical Sciences Distinguished Visitor Fund*.
- Long Term Visitor, Mathematical Biosciences Institute, Ohio-State University, 09/2008-12/2008. Special Year: Mathematical Challenges in Developmental Biology. *MBI funded teaching replacement*.
- Visiting Academic, Max Planck Institute for Mathematics, Leipzig. 27/4-2/5, 2004.
- Visiting Academic, Department of Mathematics, University of Minnesota. 18/11-1/12, 2002.
- Programme Visitor, INI, Cambridge. 10/9-26/10, 2001 *(Part of the programme "From Individual to Collective Behaviour in Biological Systems").*
- Cambridge Philosophical Society Bursary Prize, 2001.
- Best Poster Prize at "On Growth and Form" conference, University of Dundee, 1999).
- Invited Graduate Visitor. Department of Mathematics, University of Utah. January - March 1996. (Part of the University of Utah Special Year in Mathematical Biology).
- Two papers awarded "recommended" status in F1000Prime (articles 17 and 33 in publication list).
- Two papers awarded "ISI highly cited status (corresponds to top 1% of research field)" in ISI Web of Science (articles 17 and 35 in publication list).
- Awarded IMA prize for best performance in final year project, 1994.

PROFESSIONAL RESEARCH ACTIVITIES

Editorial activities (*ongoing activities)

- Editorial Board* (Associate Editor). *Royal Society: Open Science*, 2023-present.
- Editorial Board* (Associate Editor). *Journal of Nonlinear Science*, 2023-present.
- Editorial Board* (Associate Editor). *Mathematical Modelling and Methods in Applied Sciences*, 2022-present.
- Editorial Board* (Associate Editor). *Mathematical Biosciences and Engineering*, 2018-present.
- Editorial Board (Associate Editor). *Discrete and Continuous Dynamical Systems B*, 2009-2023.
- Guest Editor* for Special Issue on "Collective Behaviour", Movement Ecology, 2024.
- Guest Editor for Special Issue on "Multiscale phenomena and patterns in biological systems", *Journal of Mathematical Biology*, 2020.
- Guest Editor for PLoS Computational Biology, 2018.

- Guest Editor for "Special Issue on Morphogenesis*", Mathematical Modelling and Natural Phenomena*, 2009.

Academic memberships

- Member of Society for Mathematical Biology (SMB).
- Member of European Society for Mathematical and Theoretical Biology (ESMTB).
- Member of Edinburgh Mathematical Society (EMS).
- Member of Unione Matematica Italiana (UMI).
- Member of Istituto Nazionale di Alta Matematica (INdAM) - Gruppo Nazionale per la Fisica Matematica (GNFM).

Committees & Advisory Boards

- European Society for Mathematical and Theoretical Biology (ESMTB) Robert Heinrich Prize Awarding Committee, 2026-
- Evaluation Committee Member for PEPR "Maths-VivES", Mathematics and interactions with Living, Environment and Society. Agence Nationale de la Recherche, France, October 2024-February 2025.
- Advisory Board for Research Project: "Spot the Difference: The Cellular and Clonal Basis of Dalmatian & Mouse Spots" (Leverhulme Trust award).
- Commission member for Concorso for RTD-b (Assistant Professor) in Fisica Matematica at University of Trento, July-October 2023.
- Appointing Committee external member for Lecturer/Senior Lecturer/Reader position in School of Mathematics and Statistics, University of Glasgow, January 2020.
- Canadian Applied and Industrial Mathematics Society (CAIMS) Research Prize Award committee member, 2018-2019.
- Management Committee of Maxwell Institute Graduate School in Analysis and Applications (MIGSAA), 2014-2017.
- International Centre for Mathematical Sciences (ICMS) Programme Committee, 2009–2015.
- Management Group for Centre for Systems Biology at Edinburgh (CSBE), 2007-2012.
- Mathematical Modelling in Toxicology Grant Assessment Panel member. National Centre for Replacement, Reduction and Refinement of Experiments (NC3Rs), October 2012.
- PhD Studentship Assessment Panel member. NC3Rs, December 2011.
- International Advisory Board, "International Conference on Computational Systems-Biology and Bioinformatics", Bangkok, Thailand.
- Edinburgh Mathematical Society (EMS) board member, 2003–2006.

Examining

- External examiner for Undergraduate Mathematics Programme (Department of Mathematics, University of Dundee), 2014-2018.
- External Examiner for MSc in Mathematics with Modern Applications (Department of Mathematics, University of York), 2011-2012.
- PhD examiner/thesis committees (30+ times, including internal examiner roles not listed). External examiner/committee member for:

1. Dr Peter Schofield, External Examiner, University of Dundee, UK, 2002;
2. Dr Jasmina Panovska, External Examiner, University of Oxford, UK, 2005;
3. Dr Sarah Young, External Examiner, University of Nottingham, UK, 2009;
4. Dr Duncan Barrack, External Examiner, University of Nottingham, UK, 2010;
5. Dr Vivi Andasari, External Examiner, University of Dundee, UK, 2011;
6. Dr Christian Yates, External Examiner, University of Oxford, UK, 2011;
7. Dr Uduak George, External Examiner, University of Sussex, UK, 2011;
8. Dr Sotiris Prokopiu, External Examiner, University of Nottingham, UK, 2013;
9. Dr Andrew Savory, External Examiner, University of Dundee, UK, 2013;
10. Dr Jean-Charles Seguis, External Examiner, University of Oxford, UK, 2013;
11. Dr Matthew Eddington, External Examiner, University of Reading, UK, 2015;
12. Dr Katrina Treloar, External Examiner, Queensland University of Technology, Australia, 2015;
13. Dr Alexander Chalmers, External Examiner, University of Sydney, Australia, 2016.
14. Dr Richard Bailleul, Thesis Committee, College de France/INRIA Paris, France, 2016, 2018.
15. Dr Linnea Franssea, External Examiner, University of St Andrews, UK, 2019
16. Dr Vanni Petrolli, Thesis Committee, University of Grenoble, France, 2019
17. Dr Nadia Loy, Thesis Committee, Politecnico di Torino, Italy, 2020
18. Dr Rasa Giniunaite, External Examiner, University of Oxford, UK, 2021
19. Dr Federica Bubba, Jury member, Posthumous Thesis defense, Sorbonne University, France, 2022
20. Dr William Martinsson, External Examiner, University of Oxford, UK, 2022
21. Dr Gervy Marie Angeles, Thesis defence committee, University of Vienna, Austria, 2023
22. Dr Amira Meddah, Examiner/Thesis defence committe, Johannes Kepler University, Linz, Austria, 2024
23. Dr Camile Fraga Delfino Kunz, Dissertation evaluator, Goethe University, Frankfurt Am Main, Germany, 2026.
24. Dr Emanuele Bernardi, Thesis defence committee, President, Politecnico di Torino, Italy, 2026.

Conference/workshop/research school organisation

- International workshop co-organiser (with Mariya Ptashnyk, Stefanie Sonner, Michael Winkler), "Collective movement and pattern formation: Biology, modelling and analysis", ICMS, Edinburgh, July 27th-30th, 2026.
- International workshop co-organiser (with Asja Jelic, Philip Maini). "Collective Behaviour", Isaac Newton Institute, Cambridge, August 7th-11th, 2023.
- International research school co-organiser (with Mariya Ptashnyk): "PDEs in Mathematical Biology: Modelling and Analysis.", ICMS, Edinburgh, April 29th-May 3rd, 2019.
- Research school co-organiser (with Heiko Gimperlein): "Graduate School in Evolution Equations", ICMS, Edinburgh, Nov 15th-17th, 2017.
- International workshop co-organiser (with Radek Erban, Mark Chaplain, Ben Leimkuhler): "Multiscale methods for stochastic dynamical systems in biology", ICMS, Edinburgh, Feb 29th – Mar 04th, 2016.
- International workshop co-organiser (with Nikolaos Bournaveas, Benoit Perthame): "PDEs in Biology", ICMS, Edinburgh. Sep 26th –Sep 28th, 2011. *Note: this was a rearrangement of a meeting postponed due to the eruption of Eyjafjallajökull in 2010.*

- Instructional school and international workshop co-organiser (with Nikolaos Bournaveas, Benoit Perthame): “Nonlinear PDEs arising in mathematical biology: cell migration and tissue mechanics”, ICMS, Edinburgh. Apr 14th-21st, 2010.
- Mini-symposium co-organiser. Mathematical Modelling of Cancer Invasion. ESMTB, Edinburgh, 2008.
- Mini-Symposium co-organiser (with Thomas Hillen). Mathematical Modelling of Chemotaxis. ESMTB Meeting, Milan. 2002.
- Edinburgh Brain Tumour Modelling Workshop co-organiser (with Eliezer Shochat), ICMS, Edinburgh, 27th-28th June 2001.

Assessment and reviewing

- International research reviews**:** Assessor for Italian Research and University Evaluation Agency (ANVUR) 2011-2014.
- External assessor for University of Surrey REF 2021 preparations (2018, 2019).
- Reviewing for grant awarding bodies: Engineering and Physical Sciences Research Council (EPSRC, UK); Biotechnology and Biological Sciences Research Council (BBSRC, UK); Isaac Newton Institute (UK); Medical Research Council (MRC, UK); Leverhulme Trust (UK); NC3Rs (UK); Royal Society (UK); European Research Council (Europe); FWF (Austria Research Funding); Human Frontier Science Programme (France); BIRS (Canada); Canadian Institutes of Health Research (CIHR, Canada); Natural Sciences and Engineering Research Council (NSERC, Canada); Royal Society of New Zealand; National Science Centre (Preludium, Poland).
- Academic Promotion evaluations**:** For University of Dundee (UK), Simon Fraser University (Canada), University of Minnesota (USA), Centre de Recerca Matemàtica (CRM, Barcelona), University of Maryland Baltimore County, University of Oxford (UK), Karlstad University (Sweden),
- Reviewer for more than 40 different journals, including: Behavioural Ecology, Bulletin of Mathematical Biology, Cell Reports Physical Science, Developmental Dynamics, Discrete and Continuous Dynamical Systems-B, Deep Sea Research, Ecological Modelling, IEEE Transactions in Biomedical Engineering, IMA Journal of Mathematics in Medicine and Biology, International Journal of Nonlinear Mechanics, Journal of Biological Dynamics, Journal of Comparative Physiology A, Journal of Differential Equations, Journal of Mathematical Analysis and Applications, Journal of Mathematical Biology, Journal of Nonlinear Science, Journal of Theoretical Biology, Journal of Theoretical Medicine, Luminescence, Mathematics in Medicine and Biology, Mathematical Biosciences, Marine Ecology Progress Series, Mathematical Modelling of Natural Phenomena, Nature Communications, Nonlinearity, PLoS Computational Biology, PLoS Biology, PloS Genetics, Plos One, Proceedings of National Academy of Sciences USA, Physical Biology, Physical Review Letters, Physica D, Physical Review E, Pigment Cell and Melanoma Research, Proceedings of Edinburgh Mathematical Sciences, Proceedings of the Royal Society A, Proceedings of the Royal Society London B (Biological Sciences), Philosophical Transactions of the Royal Society London B, Royal Society Interface, Scientific Reports, SIAM Dynamical Systems, WIRES Computational Molecular Science, Zeitschreift fur Angewandte Mathematik.
- Book reviewer for Springer, Garland Science, SIAM reviews.

RESEARCH SUPERVISION

PhD thesis supervision (Sole supervisor unless stated otherwise)

- Viktoria Freingruber (Heriot-Watt, co-supervised with Dr Mariya Ptashnyk, Heriot-Watt University and Dr Linus Schumacher, University of Edinburgh, graduated 2024)
- Dr Thomas Hodgson (co-supervised with Dr Michela Ottobre, Heriot-Watt University, graduated 2024).
- Dr Eleni Moraki (co-supervised with Dr Ramon Grima, University of Edinburgh, graduated 2021).
- Dr Aleksandra Plochocka (Heriot-Watt, co-supervised with Dr Lyuba Chumakova, University of Edinburgh, graduated 2019).
- Dr Radhia Eljazi (Heriot-Watt, graduated 2016).
- Dr Arianna Bianchi (Heriot-Watt, graduated 2016, co-supervised with Prof Jonathan Sherratt).
- Dr Gordon Hunt (Heriot-Watt, graduated 2013).
- Dr Giorgios Vasilopolous (Heriot-Watt, 2012).
- Dr Jennifer Bloomfield (Heriot-Watt, 2011, co-supervised with Prof Jonathan Sherratt).
- Dr Treenut Saithong (University of Edinburgh, 2009, co-supervised with Prof Andrew Millar, Edinburgh).
- Dr Nicola Armstrong (Heriot-Watt, 2007, co-supervised with Prof Jonathan Sherratt).

MSc/post-graduate dissertation supervision

18 students: Giorgios Vasiliopolous (2005), Douglas Henderson (2006), Laura Bennett (2007), Gordon Hunt (2008), Jennifer Alexander (2009), Morag MacPherson (2010), Amal Al-Ghatani (2010), Deborah Kerr (2011), Eleni Moraki (2014,2015), Joseph Brook (2015), Karina Zile (2015), Euan McRae (2016), Lucy Pitches (2016), Aleksandra Plochocka (2016), Maximillian Strack (2018), Emiko Kemp (2019), Bandar Alharbi (2019), Thomas Hodgson (2019).

(At least) 10 of the above MSc students went on to PhD positions.

TEACHING AND ADMINISTRATION

Teaching: course and programme development

- Development of new degree programme: MSc in Applied Mathematics with Biological and Ecological Modelling (this course ran at Heriot Watt University from 2005 until 2018, before being replaced with the MSc in Mathematical Biology, Ecology and Medicine).
- Development of new course: Mathematical Biology and Medicine (Final year undergraduate and MSc course at Heriot Watt University).

Teaching: organisation

- Mathematics MSc dissertations coordinator (2007-2009).
- Final year Undergraduate Director of Studies: (2007-2010, 2017-2020).
- MIGSAA Taster project coordinator (2015-2017).

Teaching: prizes

- Heriot-Watt University Teaching Excellence Award for Global Learning and Teaching (2019). Group prize (Adamopoulou, Ptashnyk, Johnston, Saemann, Weston, Breit, Painter, Loisel, Lacey, MacIntyre, Robertson, Duncan).

Teaching: courses taught

Service teaching

- Foundation Mathematics (Engineering students), Heriot-Watt University, 2001-2002, 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007. Delivery of both front-facing lectures and tutorials, typically 50 hours per year and 100-200 students.
- Introductory Mathematics (Chemistry), Heriot-Watt University, 2003-2004, 2004-2005. Delivery of both front-facing lectures and tutorials, typically 50 hours per year and 50-100 students.
- Mathematics for Engineers and Scientists, Heriot-Watt University, 2017-2018, 2018-2019, 2019-2020. Delivery of both front-facing lectures and tutorials, typically 50 hours per year and 100-200 students.
- Quantitative Techniques for Biology, Heriot-Watt University, 2005-2006, 2006-200, 2007-2008. Delivery of both front-facing lectures and tutorials, typically 50 hours per year and 50-100 students.
- Calculus (Architecture students), Politecnico di Torino, 2020-2021, 2021-2022, 2022-2023, 2023-2024, 2024-2025, 2025-2026. Delivery of both front-facing lectures and tutorials, typically 80 hours per year and 100-200 students. *Course in 2020-2021 was online only (COVID); Courses in 2021-2022 and 2022-2023 were hybrid in presence/online.*
- Probability and Statistics (Atelier Urban and Territory Design Studio), Politecnico di Torino, 2021-2022, 2022-2023, 2023-2024, 2024-2025, 2025-2026.. Delivery of both front-facing lectures and tutorials, typically 20 hours per year and 50-100 students. *Course in 2020-2021 was online only (COVID); Courses in 2021-2022 and 2022-2023 were simultaneously in presence/online.*

Undergraduate mathematics teaching

- Mathematical Biology and Medicine, Final year undergraduate, Heriot-Watt University, 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2013-2014, 2014-2015, 2015-16, 2017-2018,2018-2019,2019-2020. Delivery of both front-facing lectures and tutorials, typically 50 hours per year and 50-100 students.
- Ordinary Differential Equations, Penultimate year undergraduate, Heriot-Watt University, 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016. Delivery of both front-facing lectures and tutorials, typically 50 hours per year and 100-200 students.
- Numerical Analysis and Scientific Computing, Undergraduate/Corso di Laurea, Politecnico di Torino, 2020-2021. Delivery of front lectures (20 hours) with 100-200 students. *Course during 2020-2021 was delivered purely online (COVID).*

Msc/Phd level mathematics teaching

- Reaction-diffusion equations, MSc level course for Mathematics, 2000-2001. Delivery of both front-facing lectures and tutorials, typically 30 hours per year and 10 students.
- Mathematical Biology and Medicine, MSc level course, Heriot-Watt University.
- Virtual teaching via SMSTC, aimed at Scotland-wide PhD mathematics students in mathematical biology (various online lectures across several years in the 2010s).
- Case studies in Mathematical Biology, PhD course, Politecnico di Torino, 2016-2017.

- Reaction-advection-diffusion equations (6 hours in the Modelli matematici per il movimento cellulare e la crescita tissuale course), Politecnico di Torino, 2022-2023.

Undergraduate Supervision

- Final Year Dissertation Supervisor, Heriot-Watt University, from 2004-2020. Typically averaging 2 per year.
- Final project (Prova Finale) supervisor, Politecnico di Torino. 1 completed in 2022, 3 completed in 2023.

University Administrative Duties

Administrative duties include activities at departmental, school, university and inter-university levels

- Elected member of University Senate, Heriot-Watt University (2006-2009).
- School Representative for University Library committee, Heriot-Watt University (2008-14).
- Dean's Representative, Heriot-Watt University (2012-2020).
- Undergraduate Director of Studies for Final Year, Mathematics, Heriot Watt University (Two periods: 2007-2011, 2017-2020).
- Maxwell Institute Graduate School for Analysis and Applications, Heriot-Watt & University of Edinburgh, Cohort Director, 2014-2017.
- Course director for Mathematics with Finance, Heriot-Watt University, 2013-2020.
- Course director for Mathematics with Psychology, Heriot-Watt University, 2005-2015.
- Heriot-Watt Internal Library Review Board, 2009.
- Mathematics Learning and Teaching Committee member, Heriot-Watt University (2007-2011, 2017-2020). Contribute to the future development of the teaching and learning strategy.
- Heriot-Watt representative for Edinburgh Mathematical Society (from 09/2003-08/2006).
- Mathematics Department Research Committee member (from 09/2002).
- Personal tutor to undergraduate students (from 2001-2020).

PUBLIC ENGAGEMENT AND KNOWLEDGE EXCHANGE

- Presentation stand at a Public Engagement Showcase, Royal Society of Edinburgh, 2000.
- Presentation at American Association for the Advancement of Science Annual Meeting (Topic: Modelling cell movement in development and disease), Boston, USA, 2002. *This resulted in subsequent companion piece/consultation for a short Nature News article, published February 2004: http://www.nature.com/news/2002/020218/full/news020218-10.html.*
- Presentation of research during visit of Scottish Cabinet Secretary for Education and Lifelong Learning (Fiona Hyslop), October 2007.
- Consultation for article appearing in popular science magazine "The Scientist" (Publication January 2004: *http://www.the-scientist.com/?articles.view/articleNo/15811/title/Pattern-Prediction/*
- Publication "Cryptic patterning of avian skin confers a developmental facility for loss of neck feathering" featured in mass media (BBC News, Daily Mail, National Geographic, Economist etc), March 2011. For example
  - https://www.bbc.com/news/uk-scotland-edinburgh-east-fife-12745163
  - https://www.nature.com/articles/471413c
  - https://news.nationalgeographic.com/news/2011/03/110315-transylvanian-naked-neck-chicken-churkeys-turkens-science/

  - https://www.dailymail.co.uk/sciencetech/article-1366748/Scientists-reveal-Transylvanian-naked-neck-chicken-sheds-feathers.html
  - https://www.economist.com/science-and-technology/2011/03/31/some-chicken-some-neck
- Publication “Reconciling diverse mammalian pigmentation patterns with a fundamental mathematical model” featured in mass media (The Guardian, Daily Telegraph, Huffington Post, The Conversation etc), January 2016. For example
  - https://www.theguardian.com/science/2016/jan/06/piebald-mystery-solved-scientists-discover-mutated-gene-animals
  - https://www.telegraph.co.uk/news/science/12084612/How-black-and-white-cats-get-their-patchy-fur-and-why-it-could-help-explain-health-defects.html
  - http://theconversation.com/how-the-cat-got-its-coat-and-other-furry-tails-52184
- Publication “Multimodal navigation strategies for turtle homing” featured in mass media (Mail Online, Daily Telegraph, Scotsman, Edinburgh Evening News, ITV, BBC Radio Suffolk, Orkney and Highlands. Over 190 items in total). For example
  - https://www.itv.com/news/2019-04-22/new-insights-into-how-turtles-navigate-hundreds-of-miles-to-ascension-island/
  - https://www.dailymail.co.uk/wires/pa/article-6945693/New-insights-turtles-navigate-hundreds-miles-Ascension-Island.html
  - https://www.thenational.scot/news/17588764.new-insight-from-edinburgh-university-into-how-turtles-navigate-journeys/

ACADEMIC PRESENTATIONS

◆ **Invited lecture series or talk at training school or workshop**
► **Invited talk/plenary talk at scientific meeting, workshop or conference**
■ **Invited mini-symposium talk at conference**
● **Seminar or colloquium**
○ **Contributed talk at conference**
* **Delivered virtually**

2026 ***153*** ► *Invited speaker at "Advances in Nonlinear Partial Differential Equations in Biology", Banff International Research Station (BIRS) for Mathematical Innovation, Canada, August 29td-30th ,2026.*

152 ► *Invited speaker at "Nonlocal Aggregation Models in the Life Sciences", Banff International Research Station (BIRS) for Mathematical Innovation, Canada, August 23rd-28th ,2026.*

151 ● *Invited speaker at University of Bath, June 29th, 2026.*

150 ► Invited speaker at FRB-GDR TheoMoDive Training course: "Theory-Driven data science", Montpellier, France, March 18th, 2026.

149 ► Modelling Diffusive Systems (MoDiS) 2026, Erwin Schrodinger International Institute, Vienna, Austria, January 26th-30th 2026.

2025 **148*** ● ESMTB monthly colloquium (Online), November 26th 2025.

147 ■ Minisymposium talk in session "PDE models and algorithms for biomedical applications", ENUMATH25, September 1st– 5th, Heidelberg, Germany.

146 ► Invited speaker at "Hydrodynamic limits of interacting agent systems", June 9th-13th, Venice, Italy

145 ► Invited speaker at "Population Dynamics: From Data to Models", Inria Centre at Université Côte d'Azur, France, March 10th-14th, 2025.

2024: **144** ► Invited speaker at workshop "Advances and Challenges in Nonlocal Models", University of Swansea, UK, November 15th 2024.

143 ► Invited speaker at workshop "Patterns in biology: mechanisms, analysis and utility" Minisymposium, University of Lancaster, UK, July 10th 2024.

142 ► Invited speaker, "PolyU-SJTU Joint Conference On Mathematical Biology-Models and Analysis", Hong Kong Polytechnic University, Hong Kong, June 20th-22nd 2024.

141 ► Invited speaker, "Chemotaxis–from Basic Physics to Biology", Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, 13-17th May, 2024.

140 ► Invited speaker, "Modeling, analysis, and control of multi-agent systems across scales", Centro De Giorgi, Pisa, Italy, 22-26th January, 2024.

2023: **139** ► Invited speaker, "Modelling non-Markov Movement Processes", Isaac Newton Institute, Cambridge, UK, 6th-10th November 2023. Available at https://www.youtube.com/watch?v=iBzAYxjG-4A.

138* ► Invited speaker, "International Seminar on Mathematical Modeling and Turing's Pattern Formation", Vellore Institute of Technology, Vellore, India, 11th-15th September, 2023.

137 ■ Invited mini-symposium speaker, special session: "Matematica per le scienze della

vita", Congresso dell'Unione Matematica Italiana, Pisa, Italy, 4th-9th September, 2023.

136 ◆ **Two hour minicourse** (2 talks) at "Summer School on Mathematics of Movement", part of the INI programme on Mathematics of Movement, Cambridge, UK, 17th-21st July, 2023. Lecture 1 at https://youtu.be/OsYi3diWfQQ?feature=shared, Lecture 2 at https://youtu.be/CqXSxMlD7p4?feature=shared.

135 ► Invited speaker. Workshop on "Topics on Neuroscience, Collective Migration and Parameter Estimation", University of Oxford, UK, 3rd-7th July, 2023.

2022: 134 ► Invited lecture. "BioToMath", Politecnico di Torino, Torino, Italy, September 2022.

133 ► Invited lecture. "From Individual to Collective Behaviour in Biological and Robotic Systems", ICMS, Edinburgh, UK, June 2022.

132 ► Plenary lecture. "Models in Population Dynamics, Ecology and Evolution (MPDE2022)", University of Torino, Torino, Italy, June 2022.

131 ◆ **3 hour minicourse (3 talks)**. Research School and Workshop on "Mathematical modelling of self-organization in medicine, biology, and ecology (MMSEOR)". University of Palermo, Palermo, Italy, May/June 2022.

130* ◆ **5 hour minicourse (4 talks**), delivered online. Summer school: Mathematical modelling in the life sciences, Haussdorf Research Institute for Mathematics, University of Bonn, Bonn, Germany, May 2022.

129 ● Seminar talk, Department of Mathematics, University of Parma, Parma, Italy, April 2022.

128 ● Seminar talk, Mathematical Biology and Ecology Seminar series, Department of Mathematics, University of Oxford, UK, February 2022

127* ► Invited lecture (delivered online). "Tissue growth and movement", Institut Henri Poincare, Paris, France, January 2022.

2021: 126* ► Virtual Talk, "Modeling and Computational Approaches to Individual and Collective Cell Movement in Complex Environments", CMO-BIRS, Mexico, September 2021.

125* ► Virtual Plenary talk, ICCMB2021 (International Conference on Computational and Mathematical Biology), Bangladesh Society for Mathematical Biology, Bangladesh, July 2021.

124* ● Virtual seminar talk, Cold Place Seminar Series, USA, June 2021.

123* ■ Virtual minisymposium talk, Society for Mathematical Biology Annual Conference, University of California Riverside, USA, June 2021

122* ● Virtual seminar talk, Department of Mathematics, University of Sheffield, England, February 2021.

2020: 121* ► Virtual conference talk, "Recent advances in biomathematics", Bangladesh Society for Mathematical Biology, December 18th-19th 2020.

120* ● Virtual Seminar, Interdisciplinary Center for Quantitative Modeling in Biology, University of California, Riverside, USA, November 2020.

119* ● Virtual Seminar at FIAS, University of Frankfurt, Germany, June 2020.

2019: 118 ► Invited speaker at workshop "PDE models in cancer invasion", Belfast, Northern Ireland, December 2019.

117 ► Invited speaker at Scottish Mathematical Biology Forum, Edinburgh, Scotland, December 2019.

116 ► Invited speaker at "On growth and pattern formation: Philip Maini's 60th birthday workshop'', Oxford, September 2019.

115 ► Invited speaker at “Bridging cellular and tissue dynamics from normal development to cancer: mathematical, computational and experimental approaches”, Banff International Research Station, Banff, Canada, June 2019. *Talk available online at https://www.birs.ca/events/2019/5-day-workshops/19w5080/videos/watch/201906202043-Painter.html.*

114 ● Two departmental seminars at Politecnico di Torino, Italy, April 2019.

112 ● Seminar at School of Mathematics and Statistics, University of Glasgow.

111 ► Invited talk at “Cell Migration and Mechanical Forces” (workshop of the PhD Programme in Complex Systems, University of Torino), Candiolo Cancer Institute, University of Torino, March 2019.

110 ● Seminar at Department of Mathematics, Imperial College London, March 2019.

109 ● Inaugural Lecture, Heriot-Watt University, January 2019. *Talk available online at https://www.youtube.com/watch?v=02IYYXXp-WM*

108 ● Seminar at Division of Mathematics, University of Dundee, January 2019.

2018: **107** ● Seminar at Dipartimento di Scienze Matematiche, Politecnico di Torino, Italy, November 2018.

106 ► Invited talk at “Differential Equations Arising from Organising Principles in Biology”, Oberwolfach, Germany, September 2018

105 ► Invited talk at “Collective dynamics and self-organization in biological sciences” workshop, ICMS, Edinburgh, UK, May 2018.

104 ● Seminar, Laboratoire J.-L. Lions, Sorbonne Université, Paris, France, March 2018.

103 ► Invited talk at “CancerTo 2018, Imaging-based approaches to cancer”, University of Torino, March 2018.

102 ● Seminar at Department of Mathematics, University of Birmingham, UK, February 2018.

2017: **101** ● Seminar at Department of Mathematics, University of Trento, Italy, November 2017.

100 ► Invited talk at “Multiscale analysis and modeling of collective migration in biological systems” workshop, Bielefeld University, Germany, October 2017.

99 ● Seminar. Department of Mathematics, Politecnico di Milano, Sepember 2017.

98 ► Invited talk MOBI-2017, Rome, Italy, June 2017.

97 ► Invited talk at ECM 2017, Hong Kong Polytechnic University, Hong Kong, June 2017.

96 ● Seminar/lecture for Graduate School, University of Torino, May 2017.

95 ► Invited plenary talk at Alberta Mathematics Dialogue, MacEwan University, Canada, May 2017.

94 ● Series of 2 seminars at Department of Mathematics, including the CAIMS distinguished lecture, University of Alberta, May 2017.

92 ► Invited talk at workshop on “Nonlinear Cross Diffusion and Multiscale Models”, Politecnico di Torino, February 2017.

2016: **91** ● Series of 5 research seminars at Politecnico di Torino, Italy, October-December 2016.

86 ► Conference “International Conference on Reaction- Diffusion Equations and their Applications to the Life, Social and Physical Sciences”. Renmin University, Beijing, China. May 2016.

85 ● Department of Mathematics, University of St Andrews, UK, May 2016.

84 ● Department of Mathematics, University of Bath, UK. March 2016.

83 ► Talk at "Multiscale methods for stochastic dynamical systems in biology, March 2016 (one of conference organisers), ICMS, Edinburgh, UK, February 2016.

2015: **82** ► Conference "Self organisation modelling and analysis", ICMMA 2015, Meiji University, Tokyo, Japan. October 2015.

81 ► Graduate school "2nd Graduate School on Evolution equations", ICMS, Edinburgh, UK. September 2015.

80 ► Workshop "Computational and multiscale modelling of cancer growth and spread", ICMS, Edinburgh, UK. June 2015

79 ► Conference of the graduate school "Cells in Motion – IMPRS", Muenster University, Germany. May 2015.

78 ● Department of Mathematics, University of Edinburgh, UK. March 2015.

77 ● Department of Mathematics, Heriot-Watt University, UK. February 2015.

2014 **76** ► Workshop "International BIOMS workshop on modeling cellular systems", Heidelberg University, Germany. October 2014.

2013: **75** ● Department of Mathematics, University of Dundee, UK. November 2013

74 ► Workshop "The mathematics of cells and tissues", Cortona, Italy, September 2013.

2012: **73** ● CCCS, University of Basel, Switzerland. December 2012.

72 ► Workshop on "Grand biological challenges for mathematicians", LMS-EPSRC Durham Symposia, University of Durham, UK. July 2012

71 ◆ **6 hour Graduate Minicourse** (Three 2-hour lectures). On "Models for Biological Pattern Formation". Politecnico di Torino, Italy, June 2012.

70 ► Workshop on "Pattern Formation: The inspiration of Alan Turing", St John's College, University of Oxford, UK. March 2012

2011: **69** ► Workshop: "Cell migration in networks", University of Muenster, Germany. November 2011

68 ● OCCAM, Department of Mathematics, University of Oxford, October 2011.

67 ● Informatics, University of Edinburgh, July 2011.

66 ■ ESMTB 2011. Session: "Modelling and Analysis of Tumour Invasion", Krakow, Poland, June/July 2011.

65 ■ ESMTB 2011. Session: "Cell migration during development: modelling and experiment", Krakow, Poland. June/July 2011.

64 ► Edinburgh SIAM Student Chapter Conference 2011, Edinburgh, UK. February 2011.

2010: **63** ● Department of Mathematics, University of Alberta, Canada, November 2010.

62 ● Department of Mathematics, University of Alberta, Canada, November 2010.

61 ► Conference: "PDEs in kinetic theories: kinetic description of biological models", ICMS, Edinburgh, UK. November 2010.

60 ■ Conference: SIAM Emerging Topics in Dynamical Systems and PDEs. Session: "Models for chemotaxis". Barcelona, Spain. May/June 2010.

59 ► Workshop: "Nonlinear PDEs arising in Mathematical Biology", ICMS, Edinburgh, UK. April 2010.

2009: **58** ● Department of Mathematics, University of Warwick, UK, November 2009.

57 ► Conference: "Patterning and Networks". Instituto de Física, UNAM, Mexico City, Mexico. October 2009.

56 ● Roslin Institute, University of Edinburgh, UK. April 2009.

55 ● Department of Mathematics, University of Strathclyde, UK. March 2009.

54 ● Edinburgh Centre for Rural Research (ECRR): Directors lunch. Heriot-Watt University. March 2009.

2008: **53** ► Workshop: "Morphogenesis, Limb Growth, Gastrulation, Somitogenesis, Neural Tube Formation". Mathematical Biosciences Institute, Ohio State University, Columbus, USA. November 2008.

52 ► Workshop: "Cell and Tissue Movement". Mathematical Biosciences Institute, Ohio State University, Columbus, USA. September 2008.

51 ■ ESMTB 2008. Session: "Mathematical Modelling in Tunour Invasion". Edinburgh, UK. June/July 2008.

50 ● Department of Mathematics, University of Stirling, UK, March 2008.

2007: **49** ► Workshop: "Mathematical Modelling of cell migration". RICAM, University of Linz, Austria. December 2007.

48 ● Department of Mathematics, University of Leeds, UK, May 2007.

47 ► Workshop: "Complex networks in the life sciences". MITACS-MATHEON, Berlin, Germany. April 2007.

46 ● Department of Mathematics, University of Glasgow, UK, March 2007.

2006: **45** ● Department of Mathematics, University of Alberta, Canada, November 2006.

44 ● Department of Mathematics, University of British Columbia, Canada, October 2006.

43 ► Workshop: "Computational Tumor Modeling", DIMACS, Rutgers University, New Jersey, USA. August 2006.

42 ► Workshop: "Tumour modelling", University of Dundee, June 2006.

41 ► Workshop: "Multiscale Modelling of Multicellular Systems", Biocomplexity Institute, University of Indiana, Bloomington, USA, May 2006.

40 ■ British Applied Mathematics Conference, University of Keele, UK. April 2006.

39 ● Department of mathematics, University of Liverpool, UK. March 2006.

2005: **38** ► Workshop: "Pattern Formation on Growing Domains", Isaac Newton Institute, Cambridge, UK. October 2005.

37 ● Department of Mathematics, University of Edmonton, Canada, September 2005.

36 ► Workshop: "Theoretical Medicine", University of Leeds, June 2005.

35 ► Workshop: "CViT", Massachusetts General Hospital, Boston. USA. March 2005.

34 ● Department of mathematics, Birmingham University, UK. March 2005.

2004: **33** ► Workshop: "Modelling of Cell Motility and Angiogenesis", University of Vienna, Vienna, Austria. November 2004.

32 ► LMS network meeting workshop, University of Nottingham, UK. September 2004.

31 ■ Society of Mathematical Biology annual meeting. Session: "Modelling tumour growth", University of Michigan, Ann Arbor, USA. July 2004.

30 ● Max Planck Institute for Mathematics in the Natural Sciences, Leipzig, Germany. April 2004.

2003: **29** ► Workshop: "Mathematical Modelling of Cancer". Kavli Institute, Institute of Theoretical Physics, University of California, Santa Barbara, USA. December 2003.

28 ► Workshop: "Mathematical Modelling of Cancer". Mathematical Biosciences Institute, Ohio State University, Columbus, Ohio, USA. November 2003.

27 ● Mathematics Department, University of Stirling, UK, November 2003.

26 ■ SIAM conference on Applications of Dynamical Systems. Minisymposium. Snowbird, Salt Lake City, USA. May 2003.

	25	●	Mathematics Department, Loughborough University, UK, Mar 2003.
	24	■	Applied Mathematics and Applications of Mathematics conference. University of Nice, Nice, France. Minisymposium: “Modelling cell migration. February 2003.
2002:	**23**	●	Dept of Mathematics, University of Minnesota, USA, Nov 2002.
	22	■	Society of Mathematical Biology Annual conference. University of Tennessee, Knoxville, USA. Minisymposium speaker. July 2002.
	21	■	European Society of Mathematical and Theoretical Biology (ESMTB) conference, University of Milan, Italy. Minisymposium speaker. July 2002
	20	○	European Society of Mathematical and Theoretical Biology (ESMTB) conference. Milan, Italy. Contributed talk. July 2002.
	19	►	Scottish Theoretical Biology Forum, Heriot-Watt, UK. June 2002.
	18	●	Dept of Mathematics, University of Cologne, Germany, May 2002.
	17	■	AAAS annual meeting. Boston, USA. February 2002.
2001:	**16**	►	Conference: “Pattern Formation by Swimming Micro-organisms and Cells”. University of Leeds, UK. December 2001
	15	●	Mathematics Colloquium, University of Alberta, Canada, November 2001.
	14	●	Mathematical Biology Seminar, University of Alberta, Canada, November 2001.
	13	●	Isaac Newton Institute, Cambridge, UK, October 2001.
	12	●	Mathematics Colloquium, Heriot-Watt University, UK, January 2001.
2000:	**11**	●	Department of Mathematics, University of Dundee, UK. December 2000.
	10	●	Department of Mathematics, Heriot-Watt University, UK. November 2000.
	9	●	Department of Mathematics, University of Glasgow, UK. May 2000.
1999:	**8**	●	Department of Mathematics, University of Tubingen, Germany, November 1999.
	7	►	Oberwolfach Mathematical Biology meeting. Oberwolfach, Germany. October 1999.
	6	►	Conference of the Japanese Society of Industrial and Applied Mathematics. Matsuyama, Japan. October 1999.
	5	■	Equadiff ‘99, Berlin, Germany. August 1999.
1998:	**4**	►	Workshop: “Pattern Formation and Morphogenesis: Model Systems”. IMA conference, University of Minnesota, Minneapolis, USA. October 1998
	3	●	Department of Mathematics, University of Utah, USA. August 1998.
	2	●	Department of Mathematics, University of Oxford, UK. February 1998.
1997:	**1**	►	IMA conference: “Mathematical Theory of Biological Systems”, Oxford, UK. July 1997.

PUBLICATIONS (Peer reviewed)

For up to date publications and citations, http://tinyurl.com/kjpainterscholar.

1. P.K. Maini, **K.J. Painter** and H. Chau (1997). Spatial pattern formation in chemical and biological systems. *Journal of the Chemical Society, Faraday Transactions*, 93, 3601-3610. doi:10.1039/A702602A. *Review article.*

2. M.R. Myerscough, P.K. Maini and **K.J. Painter** (1998). Pattern formation in a generalized chemotactic model. *Bulletin of Mathematical Biology*, 60, 1-26. doi:10.1006/bulm.1997.0010.

3. **K.J. Painter**, H.G. Othmer and P.K. Maini (1999). Stripe formation in juvenile *Pomacanthus* via chemotactic response to a reaction-diffusion mechanism. *Proceedings of the National Academy of Sciences of USA*, 96, 5549-5554.

4. **K.J. Painter**, P.K. Maini and H.G. Othmer (2000). A chemotactic model for the advance and retreat of the primitive streak in avian development. *Bulletin of Mathematical Biology*, 62, 501—525. doi:10.1006/bulm.1999.0166.

5. **K.J. Painter**, P.K. Maini and H.G. Othmer (2000). Development and applications of a model for cellular response to multiple chemotactic cues. *Journal of Mathematical Biology*, 41, 285-314. doi:10.1007/s002850000035.

6. **K.J. Painter**. Modelling of pigment patterns in fish (2001). In "*Mathematical Models for Biological Pattern Formation*" (Eds: P.K. Maini and H.G. Othmer), IMA Volumes in Mathematics and its Applications, 121, 59-82. Springer-Verlag, Berlin/Heidelberg. *Book chapter.*

7. S. Schnell, **K.J. Painter**, P.K. Maini and H.G. Othmer (2001). Spatiotemporal pattern formation in early development: a review of primitive streak formation and somitogenesis. In "Mathematical Models for Biological Pattern Formation" (Eds: P.K. Maini and H.G. Othmer), IMA Volumes in Mathematics and its Applications, 121, 11-38. Springer-Verlag, Berlin/Heidelberg. *Book chapter.*

8. T. Hillen and **K.J. Painter** (2001). Global existence for a parabolic chemotaxis model with prevention of overcrowding. *Advances in Applied Mathematics*. 26, 280-301. doi:10.1006/aama.2001.0721.

9. **K.J. Painter** and T. Hillen (2002). Volume-filling and quorum-sensing in models for chemosensitive movement. *Canadian Applied Mathematics Quarterly*, 10,501-544.

10. **K.J. Painter**, D. Horstmann and H.G.Othmer (2003). Localization in lattice and continuum models of reinforced random walks. *Applied Mathematics Letters*, 16, 375-381. doi: 10.1016/S0893-9659(03)80060-5.

11. **K.J. Painter** and J. A. Sherratt (2003). Modelling the movement of interacting cell populations. *Journal of Theoretical Biology*, 225, 327-339. doi:10.1016/S0022-5193(03)00258-3.

12. D. Horstmann, **K.J. Painter** and H.G. Othmer (2004). Aggregation under local reinforcement: from lattice to continuum. *European Journal of Applied Mathematics*, 15, 545—576. doi:10.1017/S0956792504005571.

13. S. Turner, J.A. Sherratt, **K.J. Painter** and N. Savill (2004). From a discrete to a continuous model of biological cell movement. *Physical Review E*, 69, 021910. doi:10.1103/PhysRevE.69.021910.

14. N. Armstrong, **K.J. Painter** and J. A. Sherratt (2006). A continuum approach to modelling cell-cell adhesion. *Journal of Theoretical Biology*, 243, 98-113. doi:10.1016/j.jtbi.2006.05.030.

15. T. Hillen, **K.J. Painter** and C. Schmeiser (2007). Global existence for chemotaxis with finite sampling radius. *Discrete and Continuous Dynamical Systems B.*, 7, 125—144. doi:10.3934/dcdsb.2007.7.125.

16. R. Dillon, **K.J. Painter** and M.R. Owen (2008). A single-cell based model of cellular growth using the immersed boundary method. In ``Moving Interface Problems and Applications in Fluid Dynamics'' (Eds: Boo Cheong Koo, Zhilin Li, Ping Li). *Contemporary Mathematics*. AMS. 1—16. *Book chapter.*

17. T. Hillen and **K.J. Painter**. (2009). A user's guide to PDE models for chemotaxis. *Journal of Mathematical Biology*. 58, 183-217. doi:10.1007/s00285-008-0201-3. *Recommended by F1000Prime. ISI Thompson "Highly Cited Paper". Review article.*

18. N. Armstrong, **K.J. Painter** and J.A. Sherratt (2009). Adding adhesion to a chemical signalling model for somite formation. *Bulletin of Mathematical Biology*. 71, 1-24. doi:10.1007/s11538-008-9350-1.

19. **K.J. Painter** (2009). Modelling cell migration strategies in the extracellular matrix. *Journal of Mathematical Biology*. 58, 511-543. doi:10.1007/s00285-008-0217-8.

20. J.A. Sherratt, S.A. Gourley, N.J. Armstrong and **K.J. Painter** (2009). Boundedness of solutions of a nonlocal reaction-diffusion model for adhesion in cell aggregation and cancer invasion. *European Journal of Applied Mathematics*. 20, 123-144. doi:10.1017/S0956792508007742.

21. D.J. Headon and **K.J. Painter** (2009). Stippling the skin: generation of anatomical periodicity by reaction-diffusion mechanisms. *Mathematical Modelling of Natural Phenomena (MMNP)*. 4, 84-102. doi:10.1051/mmnp/20094402.

22. H.G. Othmer, **K.J. Painter**, D. Umulis and C. Xue (2009). The intersection of theory and application in elucidating pattern formation in developmental biology. *Mathematical Modelling of Natural Phenomena (MMNP)*. 4, 1-83. doi:10.1051/mmnp/20094401.

23. **K.J. Painter** (2009). Continuous models for cell migration in tissues and applications to cell sorting via differential chemotaxis. *Bulletin of Mathematical Biology*. 71, 1117-1147. doi:10.1007/s11538-009-9396-8

24. A. Gerisch and **K.J. Painter** (2010). Mathematical modelling of cell adhesion and its applications to developmental biology and cancer invasion. In *Cell and Tissue Mechanics*. Editors. A. Chauviere and L. Preziosi. Chapter 12, 319-350. *Book chapter.*

25. **K.J. Painter**, N. Armstrong and J.A. Sherratt (2010). The impact of adhesion on cellular invasion processes in cancer and development. *Journal of Theoretical Biology. 264, 1057-1067.* doi:10.1016/j.jtbi.2010.03.033.

26. J. Bloomfield, J.A. Sherratt, **K.J. Painter** and G. Landini (2010). Cellular automata and integrodifferential equation models for cell proliferation in mosaic tissues. *Journal of Royal Society Interface*. 7, 1525-1535. doi:10.1098/rsif.2010.0071.

27. T. Saithong, **K.J. Painter** and A.J. Millar (2010). Consistent robustness analysis (CRA) identifies biologically relevant properties of regulatory network models. *PLoS ONE*. 5(12), e15589. doi:10.1371/journal.pone.0015589.

28. T. Saithong, **K.J. Painter** and A.J. Millar (2010). The contributions of interlocking loops and extensive nonlinearity to the properties of circadian clock models. *PLoS ONE*. 5 (11), e13867. doi:10.1371/journal.pone.0013867.

29. **K.J. Painter** and T. Hillen (2011). Spatio-temporal chaos in a chemotaxis model. *Physica D: Nonlinear Phenomena*. 240, 363-375. doi:10.1016/j.physd.2010.09.011.

30. J. Bloomfield, **K.J. Painter** and J.A. Sherratt (2011). How does cellular contact affect differentiation mediated pattern formation? *Bulletin of Mathematical Biology*. 73,1529-1558. doi:10.1007/s11538-010-9578-4.

31. C. Xue, H. Hwang, **K.J. Painter**, R. Erban (2011). Travelling waves in hyperbolic chemotaxis equations. *Bulletin of Mathematical Biology.* 73, 1695-1733. doi:10.1007/s11538-010-9586-4.

32. C. Mou, F. Pitel, D. Gourichon, F. Vignoles, A. Tzika, P. Tato, D. W. Burt, M. Tixier-Boichard, **K. J. Painter** and D. J. Headon (2011). Cryptic patterning of avian skin confers a developmental facility for loss of neck feathering. PLoS Biology 9(3), e1001028. doi:10.1371/journal.pbio.1001028.

33. **K.J. Painter**, G.Hunt, K. Wells, J. Johanneson, D.J. Headon (2012). Towards an integrated experimental/ theoretical approach to understanding skin morphogenesis. *Journal of Royal Society Interface Focus.* 2, 433-450. doi: 10.1098/rsfs.2011.0122. *Recommended by F1000Prime. Review article.*

34. T. Hillen and **K.J. Painter** (2013). Transport and Anisotropic Diffusion Models for Movement in Oriented Habitats. In *Dispersal, individual movement and spatial ecology: A mathematical perspective*. Eds. M.A. Lewis, P.K. Maini, S. Petrovskii, Heidelberg, Springer 2013, 177-222. *Book chapter.*

35. T. Hillen, **K.J. Painter** and M.P. Winkler (2013). Convergence of a cancer invasion model a logistic chemotaxis model. *Mathematical Models and Methods in Applied Sciences*. 23, 165-198. doi:10.1142/S0218202512500480. *ISI Web of Science Highly Cited Paper*

36. T. Hillen, **K.J. Painter** and M.P. Winkler (2013). Anisotropic diffusion in oriented environments can lead to singularity formation. *European Journal of Applied Mathematics* 24, 371-413. doi:10.1017/S0956792512000447

37. **K.J. Painter** and T. Hillen (2013). Mathematical modelling of glioma growth: the use of Diffusion Tensor Imaging (DTI) data to predict the anisotropic pathways of cancer invasion. *Journal of Theoretical Biology.* 323, 25-39. doi: 10.1016/j.jtbi.2013.01.014

38. T. Hillen, J. Zielinski and **K.J. Painter** (2013). Merging-emerging systems can describe spatio-temporal patterning in a chemotaxis model. *Discrete and Continuous Dynamical Systems B*. 18, 2513-2536. doi:10.3934/dcdsb.2013.18.251

39. B. Franz, C. Xue, **K.J. Painter** and R. Erban (2014). Travelling waves in hybrid chemotaxis models. *Bulletin of Mathematical Biology*. 76, 377-400. doi:10.1007/s11538-013-9924-4

40. **K.J. Painter** (2014). Multiscale models for movement in oriented environments and their application to hilltopping in butterflies. *Theoretical Ecology*. 7, 53-75. doi:10.1007/s12080-013-0198-0

41. **K.J. Painter**, J.M. Bloomfield, J.A. Sherratt and A. Gerisch (2015). A nonlocal model for contact attraction and repulsion in heterogeneous cell populations. *Bulletin of Mathematical Biology*. 77, 1132-1165. doi:10.1007/s11538-015-0080-x

42. A. Bianchi, **K.J. Painter** and J.A. Sherratt (2015). A mathematical model for lymphangiogenesis in normal and diabetic wounds. *Journal of Theoretical Biology*. 383, 61-86. doi:10.1016/j.jtbi.2015.07.023

43. **K.J. Painter** and T. Hillen. (2015). Navigating the flow: Individual and continuum models for homing in flowing environments. *Journal of Royal Society Interface.* 12, 20150647; doi:10.1098/rsif.2015.0647

44. R. Mort, R. Ross, K. Hainey, O. Harrison, I. Jackson, M. Keighren, **K.J. Painter**, G. Landini, R. Baker, C. Yates (2016). Reconciling diverse mammalian pigmentation patterns with a fundamental mathematical model. *Nature Communications.* 7:10288; doi:10.1038/ncomms10288

45. G. Vasilopolous and **K.J. Painter.** (2016). Pattern formation in discrete cell tissues under long range filopodia-based direct cell to cell contact. *Mathematical Biosciences.* 273, 1-15. https://doi.org/10.1016/j.mbs.2015.12.008

46. A. Bianchi, **K.J. Painter** and J.A. Sherratt (2016). Spatio-temporal models of lymphangiogenesis during wound healing. *Bulletin of Mathematical Biology*. 78, 1904-1941. https://doi.org/10.1007/s11538-016-0205-x

47. T. Hillen, **K.J. Painter**, A. Swan and A. Murtha (2017). Moments of von Mises and Fisher distributions and applications. *Mathematical Biosciences and Engineering.*14, 673-694. https://doi.org/10.3934/mbe.2017038

48. J. D. Glover, K. L. Wells, F. Matthäus, **K.J. Painter**, W. Ho, J. Riddell, J. A. Johansson, M. J. Ford, C. A. B. Jahoda, V. Klika, R. L. Mort, D. J. Headon (2017). Hierarchical patterning modes orchestrate hair follicle morphogenesis. *PloS Biology*, 15, e2002117. https://doi.org/10.1371/journal.pbio.2002117

49. I. Bica, T. Hillen and **K.J. Painter** (2017). Aggregation of biological particles under radial directional guidance. *Journal of Theoretical Biology*, 427, 77-89. https://doi.org/10.1016/j.jtbi.2017.05.039

50. A. Buttenschoen, T. Hillen, A. Gerisch and **K.J. Painter** (2018). A *space-jump* derivation for non-local models of cell-cell adhesion and non-local chemotaxis. *Journal of Mathematical Biology,* 76, 429-456. https://doi.org/10.1371/journal.pbio.2002117

51. **K.J. Painter**, W. Ho and D.J. Headon. (2018). A chemotaxis model for patterning avian feather primordia. *Journal of Theoretical Biology,* 437, 225-238. https://doi.org/10.1016/j.jtbi.2017.10.026

52. T. Hillen, **K.J. Painter** and M. Winkler (2018). Global solvability and explicit bounds for a non-local adhesion model. *European Journal of Applied Mathematics,* 29, 645-684. https://doi.org/10.1017/S0956792517000328.

53. G. Estrada-Rodriguez, H. Gimperlein and **K.J. Painter** (2018). Fractional Patlak-Keller-Segel equations for chemotactic superdiffusion. *SIAM Journal of Applied Mathematics,* 78, 1155-1173. https://doi.org/10.1137/17M1142867

54. **K.J. Painter** and T. Hillen (2018). From random walks to fully anisotropic diffusion models for cell and animal movement. In "Cell Movement", pp 103 – 141. Editors: M. Stolarska and N. Tarfulea. Modelling and Simulation in Science, Engineering and Technology, Springer. *Book chapter.*

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