

## CONTACT INFORMATION

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## RESEARCH INTERESTS

Mathematical theory of complex systems and their applications to bio- and life sciences; infinite-dimensional and stochastic analysis; probability theory and point processes; scaling limits and related meso- and macroscopic evolutions; non-local nonlinear equations; front propagation and travelling waves

## EXPERIENCE

- Department of Mathematics, Swansea University, UK  
*Associate Professor* 3/2020 – Present  
*Senior Lecturer* 3/2017 – 2/2020  
*Lecturer* 9/2013 – 2/2017
- Department of Mathematics, Bielefeld University, Germany  
*Scientific Fellow* 3/2013 – 8/2013
- Institute of Mathematics, Kyiv, Ukraine  
*Senior Research Fellow*, Department of Fractal Analysis 9/2009 – 2/2013  
*Research Fellow*, Department of Fractal Analysis 1/2008 – 8/2009  
*Junior Research Fellow*, Department of Mathematical Physics 12/2003 – 12/2007

## DEGREES AND EDUCATION

- DSc (Doctor of Sciences, Habilitation) 6/2014  
*Title:* Stochastic dynamics of continuous systems  
*Host:* Institute of Mathematics, Kyiv, Ukraine
- PhD in Mathematics 11/2004  
*Title:* Some classes of measures and related operators on configuration spaces  
*Advisor:* Prof. Dr Yuri Kondratiev  
*Host:* Institute of Mathematics, Kyiv, Ukraine
- MSc in Mathematics, *graduated with distinction* 6/2000  
*Title:* Gauss formula and symmetric extensions of the Laplacian on configuration spaces  
*Advisor:* Dr Alexei Konstantinov  
*Host:* Taras Shevchenko National University of Kyiv, Ukraine
- BSc in Mathematics, *graduated with distinction* 6/1999  
*Title:* On exponential model of Poisson spaces  
*Advisor:* Dr George Us  
*Host:* Taras Shevchenko National University of Kyiv, Ukraine

## HONORS AND AWARDS

- Winner of the Mathematical Competition for young mathematicians in Ukraine (\$ 6000) 2012
- The Ukraine President Prize for young scientists (~£1000) 2009
- George Soros' Prize for Students (\$ 800) 1996

## RECENT GRANTS AND FELLOWSHIPS

- Horizon Europe, INFRA-2021 (£265330) 2022–2025
- LMS, Conference Grants, Scheme 1 (£4000) 2018
- LMS, Research in Pairs, Scheme 4 (£500, £1000) 2017, 2018
- IMA, Small Grant Scheme (£600) 2018
- Erasmus+ staff mobility (£1000, £1000) 2017, 2018
- Swansea University Research Funds (£730, £400, £450, £900, £650) 2014–2019
- LMS, Joint Research Groups in the UK, Scheme 3, Co-Investigator (£2000, £1200) 2015–2018
- IRSES (Marie Curie Actions) Project, Grant number PIRSES-GA-2013-612669  
Co-Investigator, Ukrainian team leader (€74100) 2014–2017

## RECENT RESEARCH VISITS

- Faculty of Mathematics, Bielefeld University, Germany 2001–2012, 2014–2019
- Department of Biosciences, Helsinki University, Finland 2017–2019
- UiT The Arctic University of Norway, Campus Narvik March 2018
- Department of Mathematics, Eindhoven University of Technology, Netherlands May 2017
- Department of Mathematics, University of Leicester May 2017

## RECENT CONFERENCES AND WORKSHOPS

- *Particle Systems and PDEs XI*, Lisbon, Portugal, 6–10/11/2023
- *BMC–BAMC 2021*, Glasgow, UK, 6–9/4/2021
- *PSPDE in Braga. IX edition*, Braga, Portugal, 19–23/7/2021
- *Equadiff 2019*, Leiden, Netherlands, 8–12/7/2019
- *Welsh Maths Colloquium*, Gregynog, Wales, 20–22/5/2019
- **Organiser** of *Probability and NonLocal PDEs Interplay and Cross-Impact*, Swansea, 17–19/9/2018
- *12th AIMS Conference on Dynamical Systems, Differential Equations and Applications*, Taipei, Taiwan, 5–9/7/2018
- *Bielefeld–Edinburgh–Swansea Stochastic Spring*, Bielefeld, Germany, 26–28/3/2018
- *Journées ANR Nonlocal*, Chambéry, France, 21–23/03/2018

## RECENT TALKS ON SEMINARS AND ONE-DAY MEETINGS

- First Swansea—Wuhan Seminar on Probability, Swansea, UK, 22/9/2022
- Durham University, UK, 11/3/2019
- Cardiff University, 27/9/2018
- University of Tromsø, Norway, 14/3/2018
- University of Oslo, Norway, 19/3/2018
- Université Grenoble Alpes, Institut Fourier, France, 12/9/2017
- Eindhoven University of Technology (TU/e), Netherlands, 24/5/2017
- University of Leicester, UK, 9/3/2017

## EDITORIAL BOARDS

- Infinite Dimensional Analysis, Quantum Probability and Related Topics
- Methods of Functional Analysis and Topology
- Interdisciplinary Studies of Complex Systems
- Ukrainian Mathematical Journal

## SELECTED RECENT PAPERS

1. S. Hamis, P. Somervuo, J. Arvid Ågren, D. S. Tadele, J. Kesseli, J. G. Scott, M. Nykter, P. Gerlee, D. Finkelshtein, and O. Ovaskainen. Spatial cumulant models enable spatially informed treatment strategies and analysis of local interactions in cancer systems. *J. Math. Biol.* **86**(5) (2023), Paper No. 68, 33.
2. D. Finkelshtein. Extinction threshold in the spatial stochastic logistic model: space homogeneous case. *Appl. Anal.* **101**(7) (2022), 2726–2753.
3. D. Finkelshtein, Y. Kondratiev, E. Lytvynov, and M. J. a. Oliveira. Stirling operators in spatial combinatorics. *J. Funct. Anal.* **282**(2) (2022), Paper No. 109285, 45.
4. V. Bezborodov, L. Di Persio, D. Finkelshtein, Y. Kondratiev, and O. Kutoviy. Fecundity regulation in a spatial birth-and-death process. *Stochastics and Dynamics* **21**(01) (2021), 2050038.
5. D. Finkelshtein, Y. Kondratiev, and P. Tkachov. Doubly nonlocal Fisher-KPP equation: front propagation. *Appl. Anal.* **100**(7) (2021), 1373–1396.
6. O. Ovaskainen, P. Somervuo, and D. Finkelshtein. Mathematical and simulation methods for deriving extinction thresholds in spatial and stochastic models of interacting agents. *Methods in Ecology and Evolution* **12**(1) (2021), 162–169.
7. O. Ovaskainen, P. Somervuo, and D. Finkelshtein. A general mathematical method for predicting spatio-temporal correlations emerging from agent-based models. *Journal of The Royal Society Interface* **17**(171) (2020), 20200655.
8. D. Finkelshtein, Y. Kondratiev, E. Lytvynov, and M. J. a. Oliveira. An infinite dimensional umbral calculus. *Journal of Functional Analysis* **276**(12) (2019), 3714–3766.
9. D. Finkelshtein, Y. Kondratiev, and P. Tkachov. Accelerated front propagation for monostable equations with nonlocal diffusion: multidimensional case. *Journal of Elliptic and Parabolic Equations* **5**(2) (2019), 423–471.

## PROFESSIONAL MEMBERSHIPS

- London Mathematical Society since 2015
- Kyiv Mathematical Society since 2008
- International Centre for Mathematics in Ukraine, Member of the Managing Board since 2023

## TEACHING QUALIFICATION

- Fellow of the Higher Education Academy, recognition reference number: PR110110 July 2016

## ADMINISTRATIVE RESPONSIBILITIES (SWANSEA UNIVERSITY)

- Co-director of Research 2022 – Present
- Assessment Officer 2021 – 2024
- Head of the First Year 2017 – 2020
- Head of the Foundation Year 2014–2016
- Web officer (seminars, past exam papers, compliance) 2013 – Present

## SOFTWARE SKILLS

- Computer Programming: Python, R, VBA, VBScript, Visual Basic, Pascal, Delphi
- Internet Technologies: HTML5, CSS, JavaScript, PHP, MySQL
- Mathematical Computing: Mathematica, Matlab
- T<sub>E</sub>X-world: (L<sup>A</sup>)T<sub>E</sub>X, B<sub>I</sub>B<sub>T</sub>E<sub>X</sub>, P<sub>G</sub>F/T<sub>i</sub>kZ, most common packages
- Scientific Graphics: METAPOST, Asymptote, GeoGebra, Gnuplot
- Operating systems: Microsoft Windows family, Ubuntu, Android, iOS, OSX
- Desktop Publishing: Adobe InDesign, Corel Ventura, Quark XPress