

Curriculum Vitae

Vladimir Zubkov

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WORK EXPERIENCE

- 2017-present:** Lecturer
School of Computing, Engineering and Mathematics, University of Brighton
- 2015-2017:** Research Fellow
School of Computing, Engineering and Mathematics, University of Brighton
- 2010–2015:** Post-doctoral Researcher
Mathematical Institute, Oxford University
- 2014–present:** Scientific Advisory Board’s Researcher
Nanovision Group (ophthalmic company)
- 2012, Feb.-May:** Visiting Fellowship (Research collaboration & Teaching)
Mathematical & Physical Sciences and Engineering Divisions,
King Abdullah University of Science and Technology, Saudi Arabia
- 2007–2010:** Consultant, part time
Mathematics Learning Centre
University of Limerick, Ireland
- 2006–2007:** Organization Development Manager
Business World (Publishing House), Moscow

EDUCATION

- 2007–2010:** PhD Graduate Programme
Department of Mathematics and Statistics
University of Limerick, Ireland
- 2005–2007:** MSc
Faculty of Business Informatics, Department of Business Analysis
National Research University - Higher School of Economics, Moscow
- 2000–2005:** BSc, MSc (**grade A+; the highest score for all subjects**)
Department of Mathematics and Mechanics
Moscow State University

PUBLICATIONS

- V. Zubkov, G.E. Cossali, S. Tonini, O. Rybdylova, C. Crua, M. Heikal, S.S. Sazhin, 2017, Mathematical Modelling of Heating and Evaporation of a Spheroidal Droplet, *International Journal of Heat and Mass Transfer*, vol. 108, pp. 2181–2190.
- J. M. Oliver, J. P. Whiteley, M. A. Saxton, D. Vella, V. S. Zubkov and J. R. King, 2015, On contact-line dynamics with mass transfer, *Euro. Jnl of Applied Mathematics*, vol. 26, pp. 671-719.
- V. Zubkov, K. Short, A. Combes, J. Lefevre, Adler Ju, K. Georgas, B. Rumballe, L. O'Brien, N. Hamilton, A.P. McMahon, I. Smyth, M. Little, H. Byrne, 2015, A spatially-averaged mathematical model of kidney morphogenesis, *Journal of Theoretical Biology*, vol. 379, pp. 24-37.
- V.S. Zubkov, C.J.W. Breward, E.A. Gaffney, 2013, Meniscal tear film fluid dynamics near Marx's line, *Bulletin of Mathematical Biology*, vol. 75(9), pp. 1524-43.
- V.S. Zubkov, C.J.W. Breward, E.A. Gaffney, 2012, Coupling fluid and solute dynamics within the ocular surface tear film: A modelling study of black line osmolarity, *Bulletin of Mathematical Biology*, vol. 74(9), pp. 2062-93.
- E.S. Benilov, S.J. Chapman, J.B. McLeod, J.R. Ockendon and V.S. Zubkov, 2010, On liquid films on an inclined plate, *J. Fluid Mech.*, vol. 663, pp. 53-69
- E.S. Benilov and V.S. Zubkov, 2008, On the drag-out problem in liquid film theory, *J. Fluid Mech.* (2008), vol. 617, pp. 283-299
- V.S. Zubkov, 2005, The effects of the anomalous component of cosmic rays on excursion of the termination shock with the solar cycle. In: Proceedings of "Connecting Sun and Heliosphere", 12–17 June 2005, Whistler, Canada.

OTHER PUBLICATIONS

- V. Zubkov, G.E. Cossali, S. Tonini, C. Crua, S.S. Sazhin, Mathematical Modelling of Heating and Evaporation of a Spheroidal Droplet, *Proceedings of the ILASS (Brighton)*, 2016.
- C. Sean Bohun *at al.* "Modelling mass transfer in a rotating disk reaction vessel". *Proceedings of the 1st KAUST Study Group (Thuwal)*, 2011.
- T. Witelski *at al.* "Dynamic models of metastatic tumor growth". *Proceedings of the 27th Annual Workshop on Mathematical Problems in Industry (New Jersey)*, 2011.
- K. Baidys *at al.* Comparable aggregated indicators of QoS in the telecoms market. *Proceedings of the 77th European Study Group with Industry (Warsaw)*. 2010.
- K. Borg, V. Cregan, A.C. Fowler, M. McGuinness, S.B.G. O'Brien, L.S. Schwartz and V. Zubkov. Partial wetting phenomenon in superhydrophobic microchannels. *Proceedings of the 70th Study Group Mathematics with Industry (Limerick)*. 2009.

PRESS (non-specialist articles about some of my research)

- "Researchers recommend more crying from happiness", *METRO*, p.5, 24 Apr 2013
- "About the future of British science", *Anglia*, v.4, p.15, 2012

PUBLICATIONS (Theses)

- Ph.D Thesis:** *On the drag-out problem in liquid film theory*. University of Limerick, Ireland, 2009.
- MSc Thesis:** *Development of key performance indicators for an enterprise using data mining and statistical methods of data analysis*. Higher School of Economics, Russia, 2007.

MSc Thesis: *The effects of the anomalous component of cosmic rays on excursion of the termination shock with the solar cycle.* Moscow State University, Russia, 2005.

PRESENTATIONS

- “Current problems in Applied Mathematics”, lecture, The Moscow State University, 2016, Dec 19, Moscow, Russia.
- “Mathematical Modelling of Heating and Evaporation of a Spheroidal Droplet”, Research Workshop “MURPHYS 2016”, June 2016, Barcelona, Spain.
- “Heating and evaporation of a non-spherical droplet”, Research Workshop “DIPSI 2016”, May 2016, Bergamo, Italy.
- “Mathematical modelling of problems in biology”, seminar talk, May 2016, University of Bergamo, Italy.
- “Mathematical modelling of heating and evaporation of a non-spherical droplet”, Conference “EMN Droplets Meeting 2016”, May 2016, San Sebastian, Spain.
- “Fluid dynamics approach in mathematical modelling of kidney development”, Research Workshop “Heating and evaporation of droplets”, July 2015, Brighton, UK.
- “Mathematical model of kidney branching morphogenesis”, British Applied Mathematics Colloquium 2014, April 2014, Cardiff, UK.
- “Integration of universities and industry”, Workshop: "Youth, Science and Innovation", 2014, Apr 20-24, Kazan, Russia.
- “A spatially-averaged model of branching morphogenesis”, seminar talk, Institute of Mechanics, The Moscow State University, 2013, Sep 10, Moscow, Russia.
- “Mathematical model of kidney morphogenesis”, Oxford Conference on Challenges in Applied Mathematics, University of Oxford, 2013, Jul 1-5, Oxford, UK.
- “Mathematical Modelling: A New Tool for Studying Kidney Morphogenesis?”, International Workshop on Developmental Nephrology, University of Edinburgh, 2013, Jun 24-26, Edinburgh, UK.
- “Spatially-averaged mathematical model of kidney development”, The Society for Mathematical Biology Annual Meeting and Conference, 2013, Jun 10-13, Tempe, Arizona, USA.
- “Mathematical model of kidney morphogenesis”, seminar talk, Queensland University of Technology, 2013, Apr 26, Brisbane, Australia.
- “Spatially-averaged mathematical model of kidney morphogenesis”, seminar talk, University of Queensland, 2013, Apr 18, Brisbane, Australia.
- “Mathematical models of biological systems: the human tear film and kidney morphogenesis”, seminar talk, The Moscow State University, 2012, Dec 20, Moscow, Russia.
- “How to build a kidney: quantitative modelling of kidney morphogenesis across time and space”, HFSP meeting, 2012, Sep 19-20, Adelaide, Australia.
- “Hyperosmolarity of the tear film in dry eye syndrome”, 8th European Conference on Mathematical and Theoretical Biology, 2011, June 27-July 2, Krakow, Poland.
- “A model of tear film osmolarity”, seminar talk, University of Delaware, 2011, June 20, Newark, USA.
- “On the salts concentration dynamics in the tear film”, Center for Mathematical Biology, 2010, October 11, Oxford, UK.
- “A model of solute balance in the tear film. Positive effect of relative eyelid motion”, EUROMECH 518 Workshop: "Biomechanics of the Eye", 2010, July 26-28, London, UK
- “A model of solute balance in the tear film” (poster), Modelling at different scales in biology, 2010, June 21-23, Oxford, UK
- “On the drag-out problem with surface tension”, British Applied Mathematics Colloquium 2009, April 7-9, Nottingham, UK.

- “Solution of the drag-out problem in liquid film theory using numerical and asymptotical methods”, Analytical and Numerical Aspects of Evolution Equations 2009, March 30-April 3, Berlin, Germany.
- “The drag-out problem in liquid film theory. The case of non-negligible Capillary number”, MACSI Colloquium 2008, December 11, Dublin, Ireland.
- “The drag-out problem in liquid film theory”, The European Consortium For Mathematics In Industry 2008, June 30-July 4, London, UK.
- “The drag-out problem”, ISSEC – Irish Mechanics Society Joint Symposium 2008, May 15-16, Dublin, Ireland.
- “The drag-out problem in film coating theory”, MACSI Colloquium 2007, April 24, Limerick, Ireland.

PROFESSIONAL ACTIVITIES

- Collaboration with Prof. Melissa Little, Prof. Andy McMahon and Dr. Ian Smyth on the mathematical modelling of kidney development, Sep.-Oct, 2012; Apr.-May, 2013; Dec, 2013, The University of Queensland (Brisbane) and Monash University (Melbourne), Australia; University of South California, USA.
- “Networks in Biology” workshop, 2012, Dec 5, University of Oxford, UK
- Collaboration with Prof. Sigurdur Thoroddsen on the tear film experimental modelling, Feb.-May, 2012, Physical Sciences and Engineering, King Abdullah University of Science and Technology, Saudi Arabia
- 2nd Russian Interdisciplinary Study Group with Industry (co-organizer), 2011, September 19-23, Moscow, Russia
- Mathematics-in-Eyes Study Group, OCCAM, 2011, 11- 13 July, Oxford, UK
- Collaboration with Prof. Richard Braun on tear film modelling, June 20-25, Department of Mathematical Sciences, University of Delaware, USA
- The Twenty-Seventh Annual Workshop on Mathematical Problems in Industry, 2011, June 13 – 17, New Jersey Institute of Technology, USA
- 1st KAUST Study Group in Mathematics for Industry, 2011, January 23 – 26, Thuwal, Saudi Arabia
- 1st Russian Interdisciplinary Study Group with Industry, 2010, October 18-21, Moscow, Russia
- 77th European Study Group with Industry 2010, September 26- October 1, Institute of Mathematics of the Polish Academy of Sciences, Poland.
- British Applied Mathematics Colloquium 2010, April 6-9, Edinburgh, UK.
- 2nd Spring School - Analytical and Numerical Aspects of Evolution Equations 2010, March 28-April 1, Berlin, Germany.
- EUROMECH Colloquium 497 Recent developments and new directions in thin-film flow, 2009, July 6-9, Edinburgh, UK.
- 70th European Study Group with Industry 2009, June 28- July 3, University of Limerick, Ireland.
- Workshop, Nonlinear PDE and free boundary problems 2009, June 15-19, Warwick, UK.
- Academic visit, collaboration with Dr James Oliver on the problem “One drop measurement: surface wettability characterization using picolitre drops”, April 13 -May 2, Oxford Centre for Collaborative Applied Mathematics.
- Spring School - Analytical and Numerical Aspects of Evolution Equations 2009, March 30-April 3, Berlin, Germany.
- EMS-CIME course on Mathematical models in the manufacturing of glass, polymers and textiles 2008, September 8-19, Montecatini Terme, Italy.
- 62nd European Study Group with Industry 2008, January 21–25, University of Limerick, Ireland.

GRANDS, AWARDS, SCHOLARSHIPS

- Oxford University Award for outreach in Science and Mathematics (2014)
- Funding from New Jersey's Science & Technology University to participate at the 27th Annual Mathematical Problems in Industry Workshop, 2011, USA. (\$1400)
- OCCAM Visiting Studentships, 2009, to work as a visitor at University of Oxford for 3 weeks. (£700)
- Centro Internazionale Matematico Estivo award to participate to the Spring School “Analytical and Numerical Aspects of Evolution Equations”, 2009, Technische Universität Berlin, Germany (€600)
- Centro Internazionale Matematico Estivo award to participate to EMS-CIME course on Mathematical models in the manufacturing of glass, polymers and textiles, 2008, Italy (€2500)
- The Lomonosov Prize, awarded in 2005, for the highest average score (5.0 out of 5.0) achieved by a graduate of the Moscow State University.
- The “GARANT” Scholarship, awarded in 2005.
- “The National Savings Bank” Scholarship, awarded in 2003 and 2004, for the highest grades achieved by a third- and fourth-year mathematics students of the Moscow State University.

TEACHING EXPERIENCE

- More than 11 years of teaching experience, including more than 9 years of teaching in English.
- Experience of teaching first, second and third year courses, postgraduate courses.
- I supervised a graduate student (Brighton University) and co-supervised a master student from the Doctoral Training Centre (Oxford University).
- Experience of teaching students from non-English background, mature students and adult returners.
- Experience of working in four countries with very different cultural environments.
- 3 years of working experience as a consultant in Mathematics Learning Centre (University of Limerick) that supports students' mathematics learning across all university programmes.

Courses I have taught:

- **Fluid Dynamics**, University of Brighton, 2nd year course, class size: 180 students, 2015-2017, Lecturer⁴.
- **Engineering Simulation**, University of Brighton, 3rd year course, class size: 80 students, 2017.
- **Engineering Concepts**, University of Brighton, 1st year course, class size: 230 students, 2017.
- **Aircraft and Automotive Systems**, University of Brighton, 1st year course, class size: 50 students, 2017.
- **Mathematical Biology, Doctoral Training Centre**, University of Oxford, postgraduate course, class size: 15 students, 2014, lecturing and case study.
- **Applied Complex Variables**. University of Oxford, postgraduate course, Hilary Term, class size: 10 students, 2012-2013, Class tutor².
- **Mathematical Modeling**. King Abdullah University of Science and Technology, Saudi Arabia, postgraduate course, class size: 10 students, 2011-2012, Teaching Assistant¹ (including

¹ I assisted Oxford's professors who lectured in KAUST and remotely from Oxford via a camera. I held office hours and did lecturing of a part of the course.

lecturing of a part of the course).

- **Techniques of Applied Mathematics.** University of Oxford, 2 groups (3rd year course), Michaelmas Term, class size: 10 students, 2011-2012, Class tutor².
- **Waves and Compressible Flow.** University of Oxford, 2 groups (3rd year course), Hilary Term, class size: 10 students, 2010-2011, Class tutor².
- **Mathematical biology and ecology.** University of Oxford, UK, 2 groups (3rd year course), Michaelmas Term, class size: 10 students, 2010-2011, Class tutor².
- **Mathematics for Engineers, Calculus (two years course).** University of Limerick, Ireland, 3 groups (1st-2^d year course), class size: 30 students, 2007-2008/2008-2009/2009-2010, Class tutor³.
- **Mathematics for gifted children.** Moscow State University, Russia, specialized courses for 12-14 years old school children, class size: 30 students, 2002-2003/2003-2004, Teacher.

² I taught weekly classes (review of the theory from lectures and solution of the related problems); graded homework; advised my TA; wrote reports on the students and the TA. (TA's role was to mark homework and to solve one problem in the class.)

³ I taught weekly classes (review of the theory from lectures and solution of the related practical problems); held office hours and graded exams.

⁴ I provide weekly lectures, grade homework, hold office hours, prepare and grade exams.