

CV and publications of Dr. Alexey Larionov

PhD Medicine, MSc Bioinformatics, PgCert Academic Practices, Bachelor Medicine

www.larionov.co.uk

Current affiliation

From July 2026: Visiting Researcher, Department of Genomic Medicine, Cambridge University, UK

Main tasks: contribute to research projects in heritable predisposition to cancer

Previous employments

2021-2026: Lecturer in Bioinformatics, Cranfield University, UK
Faculty of Engineering and Applied Sciences

My main tasks in this position included research and teaching. I was a Co-Investigator and managed postdoctoral researchers on two Research Council funded projects:

- Restoring ecosystems after anthropogenic impacts (NERC NE/V006444/1)
- Developing regenerative technologies in tea production (BBSRC BB/Y003241/1)

Also, I supervised two PhD projects focusing on

- Application of long-read sequencing to detection of mycotoxin-producing fungi
- Application of AI approaches to single-cell transcriptomics data analysis

My teaching responsibilities included delivering lectures and seminars, marking assignments, supervising and marking thesis projects for the MSc Applied Bioinformatics course. Modules that I taught included:

- Introduction to Bioinformatics using Python
- Introduction to Epigenetics and Metagenomics analysis
- Advanced NGS analysis and genome assembly

My other academic activities included

- Co-supervising Medical Genetics MSc projects at Cambridge University
- Organising and teaching at Cancer Genomics and Transcriptomics course for EBI (Hinxton)
- Other standard *ad-hoc* academic tasks, such as reviewing and editing (e.g. I am a member of BJC-Reports editorial board)

2013-2021: Research Associate (Bioinformatics), Cambridge University, UK
Department of Medical Genetics, School of Clinical Medicine

The main responsibility during my employment in the Medical Genetics Department at Cambridge University was developing bioinformatics pipelines and providing bioinformatics support for research projects in heritable predisposition to cancer, ranging from small rare-

disease family datasets to large cohorts derived from the 100-Thousand Genomes (Genomics England) dataset. While providing bioinformatics support:

- I designed and implemented pipelines in different computational environments including HPC clusters and cloud computing (AWS)
- I implemented various types of bioinformatics analysis including secondary bioinformatics (from FASTQ to VCF), variant annotation and prioritization, rare variant association analyses, selection of variants based on functional and biological criteria, etc.

In addition to bioinformatics, I was involved in teaching and writing:

- My teaching tasks included supervising research projects and marking theses for the postgraduate course in Genomic Medicine, taught by the Department of Medical Genetics.
- Along with the tasks carried out for my employment in Cambridge, I published about hormonal and targeted treatments in breast cancer (carrying over from my previous research in Edinburgh) and continued teaching in the Endocrine Physiology and Pharmacology course in Edinburgh University.

My other academic activities included writing (I have contributed to a number of well-cited papers in reputable journals, see publications 2013-2021), reviewing, editing, and I completed multiple courses in a broad range of bioinformatics methods during this employment.

2008-2013: Research Fellow, Edinburgh University, UK Edinburgh Cancer Research Centre

My main task was to study transcriptional profiles of breast cancer biopsies to understand and predict response and resistance to aromatase inhibitors (a hormonal treatment) in breast cancer. The specific tasks and responsibilities included:

- Selection of optimal sets of genes informative for response prediction (based on differential gene expression between responders and non-responders)
- Design and validation of classification algorithms for response prediction (comparing regression models, SVM and decision tree- based algorithms)
- Low level microarray data analysis (mainly R-libraries for Illumina and Affymetrix RNA microarrays)
- Support for PhD, MSc and MD students within the research group
- Preparation of publications, grant applications and presenting results at international conferences

Along with bioinformatics and wet-lab tasks during that employment I completed MSc in Applied Bioinformatics (Cranefield University, 2012) and PgCert in Academic Practices (Edinburgh University, 2013), reviewed papers for multiple journals and reviewed grants.

2002 – 2007: Research Fellow, NHS Lothian, UK
Breast Research Unit, Edinburgh Western General Hospital

My main task during this employment was to contribute into the Breast Unit's studies in mechanisms and markers of endocrine resistance in breast cancer:

- Organizing clinical samples storage and clinical annotations
- Extraction of RNA from tumour biopsies, design and validation of PCR primers, qPCR data analysis

During that employment I performed qPCR analysis for hundreds of samples for multiple genes pre-selected from previous micro-array results. Also, I developed and published a highly cited standard-curve based method for qPCR data analysis (cited > 1000 times, Larionov et al, BMC bioinformatics, 2005).

2001 – 2002: CRA, PSI Pharma Support Inc., St. Petersburg, Russia

Monitoring patients' well-being and regulatory compliance in breast cancer clinical trials.

2000: Postdoctoral Research Fellow, Edinburgh University, UK

The fellowship was awarded by the Royal Society. I studied local estrogen production in breast cancer tissue and in other peripheral tissues (this resulted into two well-cited 1-st author papers).

1992 – 1999: Postgraduate student (specialization in clinical oncology) then **PhD student** (oncology) then **Researcher** in Petrov Institute of Oncology, St. Petersburg, Russia

Education

2011-2013	Postgraduate Certificate in Academic Practices Edinburgh University, UK
2010-2012	MSc in Applied Bioinformatics (bursary awarded by BBSRC) Cranfield University, UK
2001-2002	Postgraduate Certificate in computer sciences State Polytechnical University, St. Petersburg, Russia (recognized by UK NARIC)
1994-1997	PhD in medicine – recognized by UK NARIC Petrov Institute of Oncology, St. Petersburg, Russia
1992-1994	Postgraduate specialization in medical oncology Petrov Institute of Oncology, St. Petersburg, Russia
1984-1992	Bachelor degree in medicine (diploma with distinction) Pavlov State Medical University, St. Petersburg, Russia (recognized by UK NARIC)

Selected publications

Articles published within the last 5 years or cited at least 100 times. The citations count was taken from Google Scholar <https://scholar.google.co.uk/citations?hl=en&user=hGLjJ-kAAAAJ> on 17 May 2026:

Recent articles (published within the last 5 years: 2021-2026)

Waddell E, ... **Larionov A et al (2026)** Drivers of complexity in ecosystem restoration. *Journal of Applied Ecology* <https://doi.org/10.1111/1365-2664.70387>

Sizmur T & **Larionov A (2025)** The soil microbial methylome: a tool to explore the role of epigenetic memory in driving soil abiotic legacy effects. *Soil Biology and Biochemistry* <https://doi.org/10.1016/j.soilbio.2025.109712> **Cited 1 time**

Larionov A et al (2023) The contribution of germline pathogenic variants in breast cancer genes to contralateral breast cancer risk in BRCA1/BRCA2/PALB2-negative women. *Cancers* <https://doi.org/10.3390/cancers15020415> **Cited 1 time**

Yngvadottir B, ... **Larionov A et al (2022)** Frequency of pathogenic germline variants in cancer susceptibility genes in 1336 renal cell carcinoma cases. *Human Molecular Genetics* <https://doi.org/10.1093/hmg/ddac089> **Cited 40 times**

Fewings E, ... **Larionov A et al (2021)** Investigating the clinical, pathological and molecular profile of oncocytic adrenocortical neoplasms: a case series and literature review. *Endocrine Oncology*. <https://doi.org/10.1530/EO-21-0011> **Cited 3 times**

Earlier articles (published before 2021) cited at least 100 times

Larionov AA (2018) Current therapies for human epidermal growth factor receptor 2-positive metastatic breast cancer patients. *Front Oncol*. 8:89, <https://doi.org/10.3389/fonc.2018.00089> **Cited 114 times**

Fewings E, **Larionov A et al (2018)** Germline pathogenic variants in PALB2 and other cancer-predisposing genes in families with hereditary diffuse gastric cancer without CDH1 mutation: a whole-exome sequencing study. *Lancet Gastroenterol Hepatol*. [https://doi.org/10.1016/S2468-1253\(18\)30079-7](https://doi.org/10.1016/S2468-1253(18)30079-7) **Cited 130 times**

Turnbull AK, ... **Larionov AA, et al (2015)** Accurate prediction and validation of response to endocrine therapy in breast cancer. *J Clin Oncol*. <https://doi.org/10.1200/JCO.2014.57.8963> **Cited 140 times**

Sokolenko AP, ... **Larionov AA, et al (2012)** High prevalence and breast cancer predisposing role of the BLM c.1642 C>T (Q548X) mutation in Russia. *Int J Cancer* <https://doi.org/10.1002/ijc.26342> **Cited 111 times**

Miller WR & **Larionov AA (2012)** Understanding the mechanisms of aromatase inhibitor resistance. *Breast Cancer Res*. <https://doi.org/10.1186/bcr2931> **Cited 140 times**

- Hrstka R, ... **Larionov A et al (2010)** The pro-metastatic protein anterior gradient-2 predicts poor prognosis in tamoxifen-treated breast cancers. *Oncogene*.
<https://doi.org/10.1038/onc.2010.228> **Cited 137 times**
- Miller WR & **Larionov AA (2010)** Changes in expression of oestrogen regulated and proliferation genes with neoadjuvant treatment highlight heterogeneity of clinical resistance to the aromatase inhibitor, letrozole. *Breast Cancer Res*.
<https://doi.org/10.1186/bcr2611> **Cited 100 times**
- Creighton CJ, ... **Larionov AA et al (2009)** Residual breast cancers after conventional therapy display mesenchymal as well as tumor-initiating features. *PNAS*
<https://doi.org/10.1073/pnas.0905718106> **Cited 1,748 times**
- Miller WR, **Larionov A et al (2009)** Gene expression profiles differentiating between breast cancers clinically responsive or resistant to letrozole. *J Clin Oncol*.
<https://doi.org/10.1200/JCO.2008.16.8849> **Cited 125 times**
- Miller WR, **Larionov A et al (2007)** Changes in breast cancer transcriptional profiles after treatment with the aromatase inhibitor, letrozole. *Pharmacogenet Genomics*.
<https://doi.org/10.1097/FPC.0b013e32820b853a> **Cited 124 times**
- Mackay A, ... **Larionov A et al (2007)** Molecular response to aromatase inhibitor treatment in primary breast cancer. *Breast Cancer Res*. <https://doi.org/10.1186/bcr1732> **Cited 141 times**
- Tomlinson V, ... **Larionov A et al (2005)** Translation elongation factor eEF1A2 is a potential oncoprotein that is overexpressed in two-thirds of breast tumours. *BMC Cancer*.
<https://doi.org/10.1186/1471-2407-5-113> **Cited 210 times**
- Larionov A et al (2005)** A standard curve based method for relative real time PCR data processing. *BMC Bioinformatics* <https://doi.org/10.1186/1471-2105-6-62> **Cited 1,187 times**

Book chapters

- Larionov A (2016)** Novel translational research of neo-adjuvant endocrine therapy. Chapter in *Personalized Treatment of Breast Cancer*. Editors: Masakazu Toi, Eric Winer, John Benson, Suzanne Klimberg. Springer, ISBN: 978-4-431-55551-3
- Larionov A & Miller WR (2015)** Prediction of Response to Aromatase Inhibitors in Breast Cancer. Chapter in *Resistance to Aromatase Inhibitors in Breast Cancer*. Editor: Alexey A Larionov, Series: *Resistance to Targeted Anti-Cancer Therapeutics*. Springer, ISBN: 978-3-319-17971-1
- Sims A, **Larionov A, et al. (2013)** Use of microarray analysis to investigate EMT gene signatures. Chapter in *Adhesion Protein Protocols*. Editor Amanda S. Coutts, Springer ISBN 978-1-62703-538-5

Book edited

A. Larionov (editor) **(2015)** Resistance to aromatase inhibitors in breast cancer. Springer, ISBN: 978-3-319-17971-1 <http://www.springer.com/us/book/9783319179711>

Conference talks

Larionov A et al (2020) The contribution of germline pathogenic variants beyond BRCA1/2/PALB2 to contralateral breast cancer in women with a younger onset breast cancer. Oral presentation in the Joint Meeting of UK / Dutch Clinical Genetics Societies & Cancer Genetics Groups, 10 – 11 February, 2020, **Hinxton, UK**

Larionov A (2014) Recent findings from translational research of neoadjuvant endocrine therapy. Invited lecture. Kyoto Breast Cancer Consensus Conference, 20-22 February 2014, **Kyoto, Japan**

Larionov A (2013) An invited faculty member for biomarker discovery panel discussion. Controversies in Breast Cancer conference, 9-10 February 2013, **Kolkata, India**

Larionov A (2010) Molecular heterogeneity of endocrine resistance in breast cancer: profiling of clinical specimens. Oral presentation in BIT Life Sciences' 3rd World Cancer Congress-Breast Cancer Conference: 25-27 April 2010, **Shanghai, China**

Larionov A et al (2007) Reproducibility and interpretation of quantitative gene expression measurements in breast cancer biopsies. Oral presentation in the 10th Nottingham International Breast Cancer Conference, 18 – 20 September, 2007, **Nottingham, UK**

Larionov A et al (2004) Data processing in real time PCR. Oral presentation in the 1st International qPCR Symposium & Application Workshop Transcriptomics, Clinical Diagnostics & Gene Quantification, 3rd - 6th March, 2004, **Freising-Weihenstephan, Germany**