
Robert Lesurf

Washington University School of Medicine in St. Louis
McDonnell Genome Institute, Campus Box 8501, 4444 Forest Park Ave, St. Louis, MO 63108
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Education

2014-Present

Postdoctoral Research Associate

Washington University in St. Louis, MO, USA

Mentors: Obi Griffith and Elaine Mardis

Research topics: Identifying genomic features of response to trastuzumab in HER2-positive breast cancer. Developing a platform for target-capture of the regulatory regions of breast cancer.

2008-2014

Ph.D. Biochemistry (Bioinformatics option)

McGill University, Montreal, Canada

Supervisor: Michael Hallett

Thesis: Stratified informatics analysis for breast cancer: types, subtypes, and models of the disease. Research included investigating prognostic signatures in breast cancer, mouse models for breast cancer, and identifying features of progression in breast cancer.

2006-2008

M.Sc. Computer Science (Bioinformatics option)

McGill University, Montreal, Canada

Supervisor: Michael Hallett

Thesis: Molecular pathway analysis of mouse models for breast cancer.

2002-2006

B.Sc. (Honours) Biomedical Computing

Queen's University, Kingston, Canada

Supervisors: Harriet Feilotter and Parvin Mousavi

Thesis: Classification of normal and tumor prostate samples using microarray cross-platform analyses.

Interests

- Cancer Biology
- Precision Medicine
- Genomics
- Bioinformatics
- Statistics
- Data Visualization
- Machine Learning

Experience

2006

Research Assistant

Queen's University, Kingston, Canada

Using machine learning algorithms to develop predictors of prostate cancer tissues across different microarray platforms.

2005

Research Assistant

- Queen's University, Kingston, Canada
Assisting with experimental design at microarray facility; Fluorescence In Situ Hybridization (FISH) scoring of breast cancer slides.
- 2004** **Research Assistant**
Queen's University, Kingston, Canada
Internet technology assistant and database management for autism spectrum disorders research group.
- 2003** **Public Health Assistant**
Peterborough County-City Health Unit, Canada
West Nile Virus research and public education. Surveillance was carried out for evidence of standing water, mosquito larvae, and bird deaths.
- 2002** **Research Assistant**
Ministry of Natural Resources of Ontario, Peterborough, Canada
Investigated the effect of damming on watershed ecosystems in northern Ontario. Aquatic species were inventoried by electrofishing.

Publications

Lesurf R, Aure MR, Mørk HH, Vitelli V, OSBREAC, Lundgren S, Børresen-Dale AL, Kristensen V, Wärnberg F, Hallett M, Sørli T. Molecular features of subtype-specific progression from ductal carcinoma in situ to invasive breast cancer. *Cell Reports*. Article in press.

Skidmore ZL, Wagner AH, **Lesurf R**, Campbell KM, Kunisaki J, Griffith OL, Griffith M. GenVisR: Genomic Visualizations in R. *Bioinformatics*. Article in press. PMID: 27288499.

Griffith M, Griffith OL, Krysiak K, Skidmore ZL, Christopher MJ, Klco JM, Ramu A, Lamprecht TL, Wagner AH, Campbell KM, **Lesurf R**, Hundal J, Zhang J, Spies NC, Ainscough BJ, Larson DE, Heath SE, Fronick C, O'Laughlin S, Fulton R, Magrini V, McGrath S, Smith SM, Miller CA, Maher CA, Payton JE, Walker JR, Eldred JM, Walter MJ, Link DC, Graubert TA, Westervelt P, Kulkarni S, DiPersio JF, Mardis ER, Wilson RK, Ley TJ. Comprehensive genomic analysis reveals FLT3 activation and a therapeutic strategy for a patient with relapsed adult B lymphoblastic leukemia. *Exp Hematol*. Article in press. PMID: 27181063.

Lesurf R, Cotto KC, Wang G, Griffith M, Kasaian K, Jones SJ, Montgomery SB, Griffith OL; Open Regulatory Annotation Consortium. 2016. ORegAnno 3.0: a community-driven resource for curated regulatory annotation. *Nucleic Acids Res*. 44(D1):D126-32. PMID: 26578589.

Tofigh A, Suderman M, Paquet ER, Livingstone J, Bertos N, Saleh SM, Zhao H, Souleimanova M, Cory S, **Lesurf R**, Shahalizadeh S, Garcia Lopez N, Riazalhosseini Y, Omeroglu A, Ursini-Siegel J, Park M, Dumeaux V, Hallett M. 2014. The prognostic ease and difficulty of invasive breast carcinoma. *Cell Reports*. 9(1):129-42. PMID: 25284793.

Vadnais C, Shooshtarizadeh P, Rajadurai CV, **Lesurf R**, Hulea L, Davoudi S, Cadieux C, Hallett M, Park M, Nepveu A. 2014. Autocrine Activation of the Wnt/ β -Catenin Pathway by CUX1 and GLIS1 in Breast Cancers. *Biology Open*. 3(10):937-46. PMID: 25217618.

Wallace JA, Li F, Balakrishnan S, Cantemir-Stone CZ, Pecot T, Martin C, Kladney RD, Sharma SM, Trimboli AJ, Fernandez SA, Yu L, Rosol TJ, Stromberg PC, **Lesurf R**, Hallett M, Park M, Leone G, Ostrowski MC. 2013. Ets2 in tumor fibroblasts promotes angiogenesis in breast cancer. *PLoS One*. 8(8):e71533. PMID: 23977064.

Schade B, **Lesurf R**, Sanguin-Gendreau V, Bui T, Deblois G, O'Toole SA, Millar EKA, Zardawi SJ, Lopez-Knowles E, Sutherland RL, Giguere V, Kahn M, Hallett M, Muller WJ. 2013. β -catenin signaling is a critical event in ErbB2-mediated mammary tumor progression. *Cancer Research*. 73(14):4474-87. PMID: 23720052.

Knight JF*, **Lesurf R***, Zhao H, Pinnaduwa D, Davis RR, Saleh SM, Zuo D, Naujokas MA, Chughtai N, Herschkowitz JI, Prat A, Mulligan AM, Muller WJ, Cardiff RD, Gregg JP, Andrulis IL, Hallett MT, Park M. 2013. Met synergizes with p53 loss to induce mammary tumors that possess features of claudin-low breast cancer. *Proceedings of the National Academy of Sciences*. 110(14):E1301-10. PMID: 23509284. ***Authors contributed equally to the work.**

Ponzo MG*, **Lesurf R***, Petkiewicz S, O'Malley FP, Pinnaduwa D, Andrulis IL, Bull SB, Chughtai N, Zuo D, Souleimanova M, Germain D, Omeroglu A, Cardiff RD, Hallett M, Park M. 2009. Met induces mammary tumors with diverse histologies and is associated with poor outcome and human basal breast cancer. *Proceedings of the National Academy of Sciences*. 106(31):12903-8. PMID: 19617568. ***Authors contributed equally to the work.**

Schade B, Rao T, Dourdin N, **Lesurf R**, Hallett M, Cardiff RD, Muller WJ. 2009. PTEN deficiency in a luminal ErbB-2 mouse model results in dramatic acceleration of mammary tumorigenesis and metastasis. *Journal of Biological Chemistry*. 284(28):19018-26. PMID: 19435886.

Dourdin N, Schade B, **Lesurf R**, Hallett M, Munn RJ, Cardiff RD, Muller WJ. 2008. Phosphatase and tensin homologue deleted on chromosome 10 deficiency accelerates tumor induction in a mouse model of ErbB-2 mammary tumorigenesis. *Cancer Research*. 68(7):2122-31. PMID: 18381417.

Presentations

Lesurf R, Griffith O, Griffith M, Trani L, Watson MA, Ellis M, Ota D, Suman VJ, Meric-Bernstam F, Leitch AM, Boughey JC, Unzeitig G, Buzdar AU, Hunt KK, Mardis ER. The genomics of response to neoadjuvant trastuzumab and chemotherapy in HER2-positive breast cancer – results from the ACOSOG Z1041 (Alliance) trial. Poster presentation, Personalized Cancer Care Symposium, Oslo, Norway, May 2016.

Lesurf R, Campbell KM, Fulton RS, Griffith M, Mardis ER, Griffith OL. Identification of regulatory biomarkers in breast cancer. Poster presentation, Advances in Genome Biology and Technology (AGBT), Orlando, FL, February 2016.

Lesurf R, Griffith O, Griffith M, Watson MA, Hoog J, Ellis M, Ota D, Suman VJ, Meric-Bernstam F, Leitch AM, Boughey JC, Unzeitig G, Buzdar AU, Hunt KK, Mardis ER. The genomics of response to neoadjuvant trastuzumab and chemotherapy in HER2-positive breast cancer – results from the ACOSOG Z1041 (Alliance) trial. Poster discussion, San Antonio Breast Cancer Symposium, San Antonio, TX, December 2015.

Lesurf R, Mørk HH, Aure MR, Gribbestad I, Wärnberg F, Børresen-Dale A-L, Kristensen V, Hallett M, Sørli T. Integrated molecular profiles identify mechanisms of subtype-specific progression from ductal carcinoma in situ to early invasive breast cancer. Poster presentation, Personalized Cancer Care Symposium. Oslo, Norway, September 2012.

Lesurf R, Tofigh A, Shahalizadeh S, Livingstone J, Cory S, Hallett M. Breast Signature Analysis Tool (BreSAT): a

framework for investigating the molecular networks of breast cancer. Poster presentation, Department of Defense Breast Cancer Research Program 6th Era of Hope Conference. Orlando, FL, August 2011.

Lesurf R, Tofigh A, Shahalizadeh S, Livingstone J, Cory S, Hallett M. Breast Signature Analysis Tool (BreSAT): a framework for investigating the molecular networks of breast cancer. Oral presentation, Department of Defense Breast Cancer Research Program 6th Era of Hope Conference. Orlando, FL, August 2011.

Lesurf R, Tofigh A, Shahalizadeh S, Livingstone L, Cory S, Hallett M. Breast Signature Analysis Tool (BreSAT): a framework for investigating the molecular networks of breast cancer. Poster presentation, RECOMB Computational Cancer Biology 2010. Oslo, Norway, June 2010.

Honours

2006	Dean's Honour List Queen's University, Kingston, Canada
2005	Dean's Honour List Queen's University, Kingston, Canada
2004	Dean's Honour List Queen's University, Kingston, Canada
2003	Dean's Honour List Queen's University, Kingston, Canada
2002	Entrance Honours with Merit Queen's University, Kingston, Canada
2002	Governor General Medal Adam Scott High School, Peterborough, Canada
2002	Excellence in Science Award Trent University, Peterborough, Canada
2002	Declared National Biology Scholar University of Toronto, Toronto, Canada

Awards

2010-2013	Uncovering the hidden molecular signatures of breast cancer US Department of Defense Breast Cancer Research Program 2009 \$95,470 USD
2012	The molecular networks of breast cancer progression from DCIS to IDC McGill University, Faculty of Medicine Graduate Student International Travel Fund \$3,000 CAD
2012	Breast Signature Analysis Tool (BreSAT): a framework for investigating the molecular networks of breast cancer Canadian Institutes of Health Research (CIHR) Canadian Student Health Research Forum (CSHRF) \$1,000 CAD (Declined)
2008	Systems Biology and the New Frontiers of Food Biotechnology Mathematics of Information Technology and Complex Systems (MITACS) MITACS Travel Grant

2008	<p>\$1,000 CAD</p> <p>Identifying the underlying mechanisms of breast cancer through molecular signature integration</p> <p>German Academic Exchange Service (DAAD)</p> <p>DAAD Research Grant</p>
2006-2008	<p>\$2,835 CAD</p> <p>André Courtemanche Fellowship in Bioinformatics</p> <p>McGill University, School of Computer Science</p>
2006-2008	<p>\$12,500 CAD</p> <p>Intelligent Bioinformatics Management Systems</p> <p>Natural Sciences and Engineering Research Council of Canada (NSERC)</p> <p>Postgraduate Scholarship (Master's)</p> <p>\$34,600 CAD</p>