Lauren M. Childs

CONTACT INFORMATION	Department of Mathematics Virginia Tech 456 McBryde Hall Blacksburg, VA 24061	*E-mail:* lchilds@vt.edu *Website:* www.math.vt.edu/people/lchilds/ *Phone:* +1 540 231 8265

PROFESSIONAL EXPERIENCE

Assistant Professor, Mathematics, Virginia Tech	08/2016 – present
Postdoc, Epidemiology, Harvard Chan School of Public Health	11/2012 – 08/2016
Visiting Assistant Professor, Mathematics, Williams College	01/2016 – 05/2016
Postdoc, Mathematics and Biology, Georgia Tech,	Sept 2010 – Oct 2012

EDUCATION

Ph.D. in Applied Mathematics, Cornell University	05/2010
MA. in Applied Mathematics, Cornell University	04/2007
B.S. in Mathematics, Chemistry, Duke University	05/2004

HONORS

Favorite Faculty Award	2017
NSF Graduate Fellowship	2006 – 2010
NSF IGERT Fellowship	2004 – 2006
Barry M. Goldwater Scholarship	2003
PRUV Fellowship at Duke University	2003
NSF-REU Fellowship at Santa Fe Institute	2002
Howard Hughes Research Fellows Program at Duke University	2001

SELECTED PUBLICATIONS

1. D. G. Paton, L. M. Childs, M. A. Itoe, I. E. Holmdahl, C. O. Buckee, F Catteruccia[†], (2019) Exposing *Anopheles* mosquitoes to antimalarials blocks transmission of *Plasmodium* parasites. *Nature*, doi.org/10.1038/s41586-019-0973-1

2. N. M. Archer, N. Petersen, M. A. Clark, C. O. Buckee, L. M. Childs, M. T. Duraisingh[†] (2018) Resistance to *Plasmodium falciparum* in sickle cell trait erythrocytes is driven by oxygen-dependent growth inhibition. *PNAS*, doi.org/10.1073/pnas.1804388115

3. M. Walker, J. C. Blackwood, V. Brown, and L. M. Childs[†], (2018) Modelling Allee effects in a transgenic mosquito population during range expansion. *Journal of Biological Dynamics*, doi:10.1080/17513758.2018.1464219

4. O. Maxian[*], A. Neufeld[*], E. Talis[*], L. M. Childs[♯], and J. C. Blackwood[♯,†], (2017) Zika virus dynamics: When does sexual transmission matter? *Epidemics*. doi:10.1016/j.epidem.2017.06.003

5. L. M. Childs[*,†] and O. Prosper[*], (2017) Simulating within-vector generation of the malaria parasite diversity. *PLoS One.* doi:10.1371/journal.pone.0177941

6. C. Peak, L. M. Childs, Y. Grad, and C. O. Buckee[†], (2017) Comparing nonpharmaceutical interventions for containing emerging epidemics. *PNAS*. doi:10.1073/pnas.1616438114

7. L. M. Childs[*], F. Cai[*], E. G. Kakani[*], S. N. Mitchell, P. Gabrieli, C.O. Buckee[♯,†] and F. Catteruccia[♯,†], (2016) Disrupting mosquito reproduction and parasite development for malaria control. *PLoS Pathogens*, 12(12), e1006060. doi:10.1371/journal.ppat.1006060

8. W. R. Shaw, P. Marcenac, L. M. Childs, C. O. Buckee, F. Baldini, S. P. Sawadogo, R. K. Dabiré, A. Diabaté, and F. Catteruccia[†], (2016) *Wolbachia* infection in natural *Anopheles* populations affect egg laying and negatively correlate with *Plasmodium* development. *Nature Communications*, 7:11772. doi:10.1038/ncomms11772

9. S. K. Nilsson[*], L. M. Childs[*], C. O. Buckee, and M. Marti, (2015) Targeting human transmission biology for malaria elimination. *PLoS Pathogens.* 11(6):e1004871.

10. L. M. Childs and C. O. Buckee[†], (2015) Dissecting the determinants of malaria chronicity: Why within-host models struggle to reproduce infection dynamics. *Journal of the Royal Society Interface*, 12 (104): 20142379. doi: 10.1098/rsif.2014.1379

11. B. I. Coleman, K. M. Skillman, R. H. Y. Jiang, L. M. Childs, L. M. Altenhofen, M. Ganter, Y. Leung, I. Goldowitz, B. F. C. Kafsack, M. Marti, M. Llinas, C. O. Buckee, and M. T. Duraisingh[†], (2014) A *Plasmodium falciparum* histone deacetylase links parasite persistence and sexual conversion. *Cell Host & Microbe*, 16(2):177-86. doi:10.1016/j.chom.2014.06.014

12. L. M. Childs[†] and S. Strogatz[†], (2008) Stability diagram for the Forced Kuramoto model. *CHAOS: An Interdisciplinary Journal of Nonlinear Science* 18, 043128. doi:10.1063/1.3049136

* denotes equal contribution of first authors
[♯] denotes equal contribution of senior authors
[†] denotes corresponding author

AWARDED GRANTS	Jeffress Trust Award - PI	2018 - 2019
	Simons Foundation: Collaboration Grant for Mathematicians - PI	2017 - 2022
	Faculty Mentoring Grant - PI	2017
	International Travel Supplement Grant - PI	2017, 2018

RECENT INVITED TALKS

The Dynamics of Malaria Infection
Dynamics Days, Evanston, IL   01/2019

Stochastic simulation model of within-mosquito malaria parasite diversity generation
Women's Intellectual Network Research Symposium, Charlottesville, VA   09/2018

Modeling malaria blood stage dynamics in the context of sickle cell trait
University of the Sciences, Philadelphia, PA   08/2018

Signatures of within-host dynamics of dengue at a population level
SMB Annual Meeting, Sydney, Australia   07/2018

Building towards a multi-scale perspective of malaria modelling
Malaria Modeling Meeting at University of Melbourne, Melbourne, Australia   07/2018

The dynamics of malaria infection: A modelling perspective
University of Queensland, Brisbane, Australia   06/2018

Modeling the impact of antigenic variation on persistence and infectivity of malaria
CAIMS Annual Meeting: Mathematics of Disease and Ecology, Toronto, CA   06/2018

SELECTED MENTORING EXPERIENCES

At Virginia Tech: Current advisor to two Ph.D. candidates (Genomics, Bioinformatics and Computational Biology; Mathematics), one master's student (Mathematics), and four undergraduate research students (Biology; 2 Mathematics; Systems Biology). Previously advised one master's thesis (Mathematics) and six undergraduate research students (Biology; 3 Computational Modeling and Data Analytics; Mathematics; Systems Biology).

At Williams College: Co-mentored research project of three undergraduate students as part of the Williams SMALL REU. Advised two undergraduate research students (Mathematics).

At Harvard Chan School of Public Health: Current dissertation committee for Ph.D. candidate (Epidemiology). Previously mentored research of one Ph.D. candidate (Epidemiology) and two masters' thesis (Epidemiology).