



ALEEZA C. GERSTEIN

EMPLOYMENT

2018- Assistant Professor, Departments of Microbiology and Statistics, Faculty of Science,
The University of Manitoba.

EDUCATION

- 2015-18 Banting Postdoctoral Fellow, Canadian Institutes of Health Research. Department of Microbiology & Immunology, Medical School, University of Minnesota. Advisor: Dr. Kirsten Nielsen
- 2013-15 Postdoctoral Fellow, National Sciences and Engineering Research Council of Canada & Azrieli International Postdoctoral Fellowship. Department of Molecular Microbiology & Biotechnology, Tel Aviv University and Department of Genetics, Cell Biology & Development, University of Minnesota. Advisor: Dr. Judith Berman
- 2007-12 Doctorate of Philosophy, Zoology, University of British Columbia.
Advisor: Dr. Sarah (Sally) Otto
- 2004-06 Master of Science, Zoology, University of British Columbia. Advisor: Dr. Sarah (Sally) Otto
- 1999-03 Bachelor of Science (Honours), Ecology & Evolution, University of Western Ontario

AWARDS AND HONOURS (total dollar amount awarded)

- 2021-23 CIFAR Azrieli Global Fellow, Fungal Kingdom: Threats and Opportunities Program, \$ 100 000 CAD.
- 2020 Faculty of Science Outreach Award, University of Manitoba, \$1000 CAD.
- 2015-18 Banting Postdoctoral Fellow, CIHR, \$140 000 CAD.
- 2014 Microbial and Plant Genomics Institute travel award, University of Minnesota, \$1000 USD.
- 2013 Delill Nasser Career Development travel award, Genetics Society of America, \$1000 USD.
- 2013 Molecular Mycology course scholarship, Marine Biology Laboratories, \$1530 USD.
- 2013-14 Postdoctoral Fellowship, NSERC, \$80 000 CAD.
- 2013 Postdoctoral Fellowship, Azrieli Foundation, \$40 000 CAD.

FUNDED GRANTS (total dollar amount awarded; for collaborator/participant roles, the dollar amount is my involvement)

- 2021-27 NSERC CREATE: Evolutionary Fungal Pathogenesis (EvoFunPath) Training Program, \$1 650 000 CAD (role: Co-applicant, PI: Dr. Christian Landry, Laval University)
- 2020-21 Manitoba Medical Service Foundation, "Variation in Vulvovaginal Candidiasis Drug Response: A Manitoba Cohort Study", \$30 000 (role: PI, Collaborators: Dr. Vanessa Poliquin, Dr. Alicia Berard)
- 2020 Faculty of Science Interdisciplinary Research Grant, University of Manitoba, "Recurrent vulvovaginal candidiasis pilot study", \$12 000. (role: PI, Co-applicant: Dr. Vanessa Poliquin)
- 2020 University Research Grants Program, University of Manitoba, "Diversity of human fungal pathogens in Manitoba", \$10 000 CAD. (role: PI)
- 2019-24 NSERC Discovery Grant & Discovery Launch Supplement, "Genotypic and phenotypic variation during adaptation in fungal microbes", \$202 500 CAD. (role: PI)



- 2019-24 Canadian Foundation of Innovation John R. Evans Leaders Fund, “High-throughput genotypic and phenotypic fungal analysis research facility”, \$599 078 CAD. (role: PI, Co-applicant: Dr. Stephen Harris)
- 2019 Faculty of Science Course (re)-Development and Pedagogy Grants, University of Manitoba “Statistical and computational analysis of life sciences data”, \$3900 CAD. (role: PI)
- 2019 University Research Grants Program, University of Manitoba, “Genotypic basis of drug response in a fungal pathogen”, \$7500 CAD. (role: PI)
- 2019 Planning and Dissemination Grant - Institute Community Support, CIHR, “Formation of the Canadian Fungal Research Network (CanFunRN)”, \$10 000 CAD. (role: Co-applicant, Principal Applicant: Dr. Steven Harris, The University of Manitoba)
- 2019 Israel Science Foundation, “The role of aneuploidy in adaptation”, \$14 000 CAD. (role: ISF International Collaborator, PI: Yoav Ram, IDC Herzliya)
- 2019 Genome Research and Development Initiative, Government of Canada, “Genomic characterization of antifungal resistant *Candida* pathogens”. (role: External participant, PI: Amrita Bharat, National Microbiology Laboratory)
- 2019 Community Science Program, Joint Genome Institute, “Constructing a functional and regulatory gene atlas of a nitrogen-fixing legume symbiont to instruct genome annotation and synthetic biology applications”. (role: Collaborator, PI: George DiCenzo, Queens University)

PUBLICATIONS (*directly-mentored student; **equal contribution)

27. I. Ene, M.A. Hickman, **A.C Gerstein**. The interplay between neutral and adaptive processes shapes genetic variation during *Candida* species evolution. *Current Clinical Microbiology Reports*. In press. (2021)
26. **A.C. Gerstein**** & N.P. Sharp**. The population genetics of ploidy change in fungi. *FEMS Microbiology Reviews*. In press. <https://doi.org/10.1093/femsre/fuab006>. (2021)
25. L. Horianopoulos, E. Gluck-Thaler, I. Benoit Gelber, L.E. Cowen, J. Geddes-McAlister, C.R. Landry, I.S. Schwartz, J.A. Scott, A. Sellam, D.C. Sheppard, T. Spribille, R. Subramaniam, A.K. Walker, S.D. Harris, R.S. Shapiro, **A.C. Gerstein**. The Canadian Fungal Research Network: Current challenges and future opportunities. *Canadian Journal of Microbiology*. 67: 13-22. (2020)
24. **A.C. Gerstein**, J. Berman. *Candida albicans* genetic background influences mean and heterogeneity of drug responses and genome stability during evolution to fluconazole. *mSphere*. 5: e00480-20. (2020)
23. **A.C. Gerstein**, K.M. Jackson, T.R. McDonald, Y. Wang, B.D. Lueck, K.D. Smith, A. Akampurira, D.B. Meya, C. Xue, D.R. Boulware, K. Nielsen. Identification of pathogen genomic differences that impact human immune response and disease during *Cryptococcus neoformans* infection. *mBio*, 4: e01440-19. (2019)
22. M. Mandic, M.L. Ramon, **A.C. Gerstein**, A.Y. Gracey & J.G. Richards. Variable gene transcription underlies phenotypic convergence of hypoxia tolerance in sculpins. *BMC Evolutionary Biology*, 18:163. (2018)
21. S Yeaman, **A.C. Gerstein**, K.A. Hodgins, M.C. Whitlock. Quantifying how constraints limit the diversity of viable routes to adaptation. *PLoS Genetics*, 14: e1007717. (2018)
20. A. Forche, G. Cromie, **A.C. Gerstein**, A.C., N. Solis, Z. Pisithkul, W. Srifa, E. Jeffery, D. Abbey, S.G. Filler, A. Dudley, J. Berman. Oral cavity exposure yields rapid phenotypic and genotypic diversification in *C. albicans*.



- GENETICS*, 209: 725-741. (2018)
19. **A.C. Gerstein**, H. Lim*, J. Berman & M. Hickman. Ploidy tug-of-war: Evolutionary and genetic environments influence the rate of ploidy drive in a human fungal pathogen. *Evolution*, 71: 1025-1038. (2017)
 18. **A.C. Gerstein** & K. Nielsen. It's not all about us: Evolution and maintenance of *Cryptococcus* virulence requires selection outside the human host. *Yeast*, 34: 143-154. (2017)
 17. J. Ono, **A.C. Gerstein** & S.P. Otto. Widespread genetic incompatibilities between first-step mutations during parallel adaptation of *Saccharomyces cerevisiae* to a common environment. *PLoS Biology*, 15: e1002591. (2017)
 16. **A.C. Gerstein**, A. Rosenberg, I. Hecht & J. Berman. *diskImageR*: Quantification of resistance and tolerance to antimicrobial drugs using disk diffusion assays. *Microbiology*, 162: 1059-1068. (2016)
 15. **A.C. Gerstein**** , M.S. Fu** , K. Ormerod, Z. Li, J. Fraser, J. Berman & K. Nielsen. Polyploid titan cells produce haploid, diploid, and aneuploid progeny to promote stress adaptation. *mBio*. 5: e01340-15. (2015)
 14. **A.C. Gerstein** & J. Berman. Shift and adapt: the cost and benefits of karyotypic variation. *Current Opinion in Microbiology*, 26: 130-136. (2015)
 13. **A.C. Gerstein**** , J. Ono** , D.S. Lo* , M. Campbell* , A. Kuzmin & S.P. Otto. Too much of a good thing: The unique and repeated paths towards copper adaptation. *Genetics*, 199: 555-571. (2014)
 12. M. Z. Anderson, **A.C. Gerstein**, L. Wigen, J.A. Baller & J. Berman. Silencing is noisy: Population and cell level noise in telomere-adjacent genes is dependent on telomere position and Sir2. *PLoS Genetics*, 10: e1004436. (2014)
 11. **A.C. Gerstein**, A. Kuzmin & S.P. Otto. Loss of heterozygosity facilitates passage through Haldane's sieve for *Saccharomyces cerevisiae* undergoing adaptation. *Nature Communications*, 5:3819. (2014)
DOI: 10.1038/ncomms4819. (Selected as an exceptional recommended read by F1000Prime)
 10. **A.C. Gerstein**. Mutational effects depend on ploidy: All else is not equal. *Biology Letters*, 9: 20120614 (2012)
 9. **A.C. Gerstein**, D.S. Lo* & S.P. Otto. Parallel genetic changes and non-parallel gene-environment interactions underlie drug resistance in yeast. *GENETICS*, 192: 241-252. (2012)
 8. **A.C. Gerstein** & S.P. Otto. Diploid superiority over haploids during *Saccharomyces cerevisiae* batch culture evolution is not explained by fitness assays. *PLoS One*, 6: e26599. (2011)
 7. **A.C. Gerstein** & J.-S Moore. Perspective. Small is the new big: Assessing the population structure of microorganisms. *Molecular Ecology*, 20, 4385–4387. (2011)
 6. **A.C. Gerstein**, M.A. Mandegar* , L.A. Cleathero* & S.P. Otto. Haploid adapt faster than diploids across a range of environments. *Journal of Evolutionary Biology*, 24:531-540. (2011)
 5. **A.C. Gerstein** & S.P. Otto. The causes of evolution. *Journal of Heredity*, 100: 571-581. (2009)
 4. S.P. Otto & **A.C. Gerstein**. Primer: The evolution of haploidy and diploidy. *Current Biology*, 18: R1121 R1124. (2008)
 3. **A.C. Gerstein**, R. McBride & S.P. Otto. Ploidy reduction in *Saccharomyces cerevisiae*. *Biology Letters*, 4: 91-94. (2008)
 2. **A.C. Gerstein**, H.E. Chun, A. Grant & S.P. Otto. Genomic convergence toward diploidy in *Saccharomyces cerevisiae*. *PLoS Genetics*, 9: e145. (2006)
 1. S.P. Otto & **A.C. Gerstein**. Why have sex? The population genetics of sex and recombination. *Biochemical Society Transaction*, 34: 519-522. (2006)



Submitted:

28. O. Salama, A.C. Gerstein. High Throughput Computational Analysis of Biofilm Formation from Time-lapse Microscopy. Submitted to *Current Protocols*, manuscript ID CP-21-0166.

SOFTWARE

1. *diskImageR*: analysis pipeline to analyze drug resistance and tolerance from photographs of disk diffusion assays. Available for download on CRAN and at <https://github.com/acgerstein/diskImageR>. Role: author, creator. (2016)
2. *dgconstraint*: package to calculate metrics of diversity constraint for genomics of adaptation. Available for download at <https://github.com/samyeaman/dgconstraint>. Role: co-author, co-creator. (2018)

INVITED WORKSHOPS, MEETINGS & SYMPOSIUM PRESENTATIONS

- 2020 "The Mathematics of Microbial Evolution: Beyond the Limits of Classical Theory" Workshop, Banff International Research Station for Mathematical Innovation and Discovery. Postponed due to COVID-19.
- 2020 "Bringing benchwork to bedside; how to make impactful scientific contributions", Medical Microbiology symposium, The University of Manitoba. Postponed due to COVID-19.
- 2019 Evolutionary Genetics of Infectious Disease, Fields Institute Meeting, ON, Canada
- 2018 "Fungal Genomics and Diseases" session; Canadian Society of Microbiologists Annual Meeting, MB, Canada
- 2018 "150 Years of the American Naturalist" Symposium, American Society of Naturalists Stand-Alone meeting, CA, USA
- 2015 "The Evolutionary Ecology of Complex Life Investment Strategies" workshop, The Santa Fe Institute (for theoretical research), NM, USA.
- 2015 "Genome and Metabolome Diversity" session; Elements, Genomes, and Ecosystems; a Royal Society Meeting, Buckinghamshire, England.
- 2013 Azrieli Fellows Forum, Tel Aviv, Israel.
- 2012 "Evolutionary and Population Genomics" session; Cellular & Molecular Fungal Biology Meeting, Gordon Research Conference, NH, USA.
- 2010 "Biodiversity: A Molecular Perspective" Symposium, Canadian Society for Ecology and Evolution, PQ, Canada.

INVITED SEMINARS

- 2021 Department of Plant Science, The University of Manitoba.
- 2021 Data Science Applied Research and Education Seminar, The Canadian Statistical Sciences Institute (CANSSI) Ontario
- 2020 Department of Biology, University of Toronto Mississauga, ON, Canada.
- 2018 Department of Biology, McMaster University, ON Canada.
- 2018 Department of Ecology & Evolution, University of Arizona, AZ USA.



- 2017 Department of Biological Sciences, The University of Calgary, AB Canada.
- 2015 Biology Department, The University of Winnipeg, MB Canada.
- 2015 Medical Microbiology & Immunology Dept Bioinformatics Group, Creighton University, NE USA.
- 2015 Biology Department, Georgia Tech, GA USA.
- 2014 Department of Microbiology, The University of Manitoba, MB Canada.
- 2012 Department of Biological Sciences, The University of Calgary, AB Canada.
- 2012 Department of Biological Sciences, The University of Manitoba, MB Canada.
- 2012 Comparative Physiology Seminar, University of British Columbia, BC Canada.
- 2011 Biology Department, The University of Winnipeg, MB Canada.

RECENT CONTRIBUTED PRESENTATIONS (*Gerstein lab student, bold indicates presenter)

- 2021 **O. Salama***, A.C. Gerstein. Canadian Fungal Research Network. Online. (*oral presentation*)
- 2021 **B. Sidney***, A-R Adamu Bukari*, A.C. Gerstein. Canadian Fungal Research Network. Online. (*oral presentation*)
- 2021 **R. Kukurudz***, A-R Adamu Bukari*, M. Chapel*, R. Sierhuis*, Q. Wonitowny*, A.C. Gerstein. Canadian Fungal Research Network. Online. (*oral presentation*)
- 2021 **O. Salama***, A.C. Gerstein. Candida and Candidiasis Meeting Online. (*poster presentation*)
- 2021 **A-R Adamu Bukari***, B. Sidney*, A.C. Gerstein. Candida and Candidiasis Meeting Online. (*poster presentation*)
- 2020 **O. Salama***, A.C. Gerstein. Canadian Fungal Research Network. Online. (*selected for presentation*)
- 2020 **A-R Adamu Bukari***, A.C. Gerstein. Genome Informatics 2020. Wellcome Genome Campus Advanced Courses + Scientific Conferences. Online. (*poster presentation*)
- 2020 **M. Chapel***, A.C. Gerstein. University of Manitoba Undergraduate Research Poster Competition. Online. (*poster & flash talk*)
- 2020 **A.C. Gerstein**, A. Selmecki, M. Chapel*, C. Focht, A. Guyer, R. Thomas, R. Todd, Q. Wonitowny*, J. Berman. The Allied Genetics Conference, Genetics Society of America, WA USA. (*selected flash talk & poster*). Declined online attendance due to COVID-19.
- 2019 **T. Le***, **M. Henry***, A.C. Gerstein. University of Manitoba Undergraduate Research Poster Competition.
- 2019 **A.C. Gerstein**, A. Selmecki, J. Berman. Microbial Population Biology, Gordon Research Conference, NH USA. (*poster*)
- 2019 **A.C. Gerstein**, A. Selmecki, J. Berman. Canadian Society of Microbiology. Sherbrooke, QC. (*poster*)
- 2017 **A.C. Gerstein**, M. Hickman, K. Nielsen, J. Berman, S.P. Otto. Society for the Study of Evolution, OR USA. (*oral*)
- 2017 **A. Gerstein**, D.R. Boulware, D.B. Meya & K. Nielsen. Fungal Genetics Conference, Genetics Society of America, CA USA. (*oral & poster*).
Oral presentation selected for Population Genomics session.



CONFERENCE & SYMPOSIUM ORGANIZATION

- 2020 Canadian Fungal Research Network Online Meeting. One of four main organizers for conference with 63 talks and over 300 registrants.
- 2020 Understanding Adaptation Through Experimental Evolution. Society for Molecular Biology and Evolution selected symposium. Invited Speakers: Drs. Christina Burch, Martin Turcotte; 8 contributed talks selected from 51 abstracts. Co-organizers: Rike Stelkens, Alejandro Couce, Caiti Smukowski Heil. Cancelled due to COVID-19.
- 2020 Fungal Biology & Pathogenesis session. Canadian Society of Microbiologists annual meeting. Invited Speaker: Dr. Deborah Hogan. Co-organizer: Rebecca Shapiro. Cancelled due to COVID-19.

DIRECT SUPERVISION (all University of Manitoba unless otherwise specified)

Graduate

- 2020 Margot Henry (MSc. degree, Department of Statistics)
- 2019 Abdul-Rahman Adamu Bukari (Ph.D. degree, Department of Microbiology)
- 2019 Ola Salama (MSc. degree, Department of Microbiology)

Research Personnel

- 2020- Rebekah Kukurudz., Research Technician (Department of Microbiology)

Undergraduate Honours & Co-op Students

- 2020-21 Brooke Sidney Honours Project (Department of Microbiology)
- 2020 Jay Khakhariya, Co-op Student (Computer Science)
- 2019-20 Madison Chapel, Honours Project (Department of Microbiology).
Recipient of Canadian Society of Microbiologist Undergraduate Award in 2020 (one of five students).
- 2019 Quinn Wonitowy, NSERC USRA & Co-op Student (Microbiology)
- 2019 Margot Henry, Co-op Student (Department of Statistics)
- 2014 Heekyung Lim, Honours Project (College of Biological Sciences, University of Minnesota)

Undergraduate Summer Students & Technicians

- 2021 Devin Habon, University of Manitoba University Research Award (Microbiology)
- 2021 Inderpreet Singh, University of Manitoba Faculty of Science Undergraduate Student Research Award (FoS USRA) recipient (Microbiology)
- 2018-20 Rebekah Kukurudz; Faculty of Science, FoS USRA recipient & student technician (Genetics)
- 2020, 21 Brooke Sidney, Faculty of Science, FoS USRA award recipient (Microbiology)
- 2020 Riley Sierhuis, National Sciences and Engineering Research Council of Canada USRA (Statistics)
- 2020- Yana Sylvos, University of Manitoba University Research Award (Microbiology)
- 2019-20 Tri Le, Faculty of Science, FoS USRA & student technician (Genetics)
- 2019 Daniel Peter-Salawu, Faculty of Science, University of Manitoba USRA (Microbiology)

STUDENT COMMITTEES

- 2021 Wesley Johnson, Department of Chemistry (Ph.D. student)
- 2020 Kamaldeep Chhoker, Department of Biological Sciences (Ph.D. student)



- 2020 Adriana-Stefania Ciupeanu, Interdisciplinary, Departments of Math & Statistics (Ph.D. student)
2019 William Bugg, Department of Biological Sciences (Ph.D. candidate)
2019 Domenica De Luca, Medical Microbiology/NML (MSc. student)
2019 Nelson Mok, Medical Microbiology/NML (MSc. student)
2019 Inesh Munaweera, Department of Statistics (Ph.D. candidate)
2019 Chloe Schmidt, Department of Biological Sciences (Ph.D. candidate)
2019 Krista Shofstall (Ph.D., Department of Biological Sciences)

TEACHING

Graduate

- 2020W MBIO7040: Module on Data Analysis and Visualization with R (12 hour workshop, 11 Microbiology graduate students for credit, 7 additional participants)
2019F MBIO7160: Modern Statistics for Modern Biology (full semester course, 5 graduate students from Microbiology, Medical Genetics & Biochemistry, Medical Microbiology)
2019W MBIO7040: Module on Data Analysis and Visualization with R (12 hour workshop, 12 Microbiology graduate students for credit, 12 additional participants)
2019W Statistics 7350: Analysis and Visualization of Biological Data (half-semester course, 4 Statistics graduate students)

Undergraduate

- 2020F MBIO4530: Undergraduate Research Project Course (full semester course, 3 honours project students)
2020W STAT2150: Statistics and Computing (full semester course, 115 first to fourth year students from many different majors; required for Statistics majors)
2019F MBIO4030: Advanced Microbial Genetic Lab (full semester writing-intensive course, 23 third and fourth year Microbiology students)
2019F STAT4600: Modern Statistics for Modern Biology (concurrent with MBIO7160, 2 fourth year Statistics students)

REVIEW ACTIVITIES

Funding Agencies (9 total): Azrieli International Postdoctoral Fellowship Program Reviewer; Dutch Research Council (NWO), French National Research Agency, Graduate Women in Science Fellowship, Human Frontier Science Program, India Alliance DWB Welcome Trust, The Leverhulme Trust, National Sciences and Engineering Research Council of Canada, Research Manitoba, United States National Science Foundation

Journals (26 total): American Naturalist, Applied and Environmental Microbiology, Axios Review, Biological Journal of the Linnean Society, BMC Genomics, Canadian Journal of Microbiology, Cell Reports, Current Biology, Ecology Letters, Ecology & Evolution, Evolution, Evolutionary Applications, G3 (Genes|Genomes|Genetics), Genetics, Heredity, iScience, Journal of Biological Dynamics, mBio, Molecular Biology and Evolution, Molecular Ecology, Nature Communications, Nature Ecology and Evolution, PLoS One, Proceedings of the Royal Society Biology, Proceedings of the Royal Society Open Science, Yeast



COMMUNITY SERVICE & OUTREACH

- 2021- Managing Committee, NSERC CREATE Grant on Evolution of Fungal Pathogenesis
- 2020- Member, Governor General's Global Excellence Initiative Canvassing Committee; Universities Canada. National committee to identify candidates for international awards and prizes.
- 2021 Research Manitoba NSE Masters Applications Awards Committee
- 2019-20 Abstract reviewer, American Society of Microbiologists Microbe Meeting
- 2018-20 Committee Member, DeLill Nasser Award; Genetics Society of America
- 2019 Organizer, Canadian Fungal Research Network Establishment Meeting. One of three organizers that brought 14 Canadian fungal researchers to Winnipeg for a one-day meeting.
- 2018 Member, Working Group on Community, Journals, Conferences Member; Genetics Society of America
- 2017-18 Assistant program manager, *GENETICS* Program in Mentored Peer Review, Genetics Society of America
- 2017- Community Advisory Panel member, OurWinnipeg; City of Winnipeg
- 2017-18 Co-Chair, Early Career Scientists Communications and Outreach Committee; Genetics Society of America
- 2016-17 Trainee Representative, Publications Committee; Genetics Society of America
- 2016-17 Community Organizer, Leadnow; Manitoba Region
- 2016 Associate, Victoria Hospital Research & Evaluation Volunteer; Winnipeg Regional Health Authority, Winnipeg, Canada

UNIVERSITY of MANITOBA SERVICE

- 2020- Faculty, Visualization and Disease Analytics Graduate Training Program, University of Manitoba & University of Victoria (NSERC Collaborative Research and Training Experience Program). Member of Recruitment and Selection Committee.
- 2020- Seminar Committee member (Department of Statistic)
- 2019- Seminar Committee member (Department of Microbiology)
- 2019 Tenure Guidelines Committee (Faculty of Science)
- 2019 NSERC Discovery Grant Internal Panel
- 2019 Retreat Committee Member (Department of Microbiology, initiated '3 minute thesis competition' and organized judging of 3MT awards)
- 2019 IT Committee Member (Department of Statistics)
- 2019 Evolution Discussion Group co-organizer (a multi-department journal club that meets monthly)
- 2019 Undergraduate thesis poster judge (Department of Microbiology)
- 2018 Undergraduate Research Poster Competition judge (Office of Research Services initiative)

PROFESSIONAL SOCIETY MEMBERSHIP

American Society for Microbiology (ASM), Canadian Society of Microbiologists (CSM), Genetics Society of America (GSA), Society for the Study of Evolution (SSE), Society for Molecular Biology and Evolution (SMBE)



CAREER INTERRUPTION

03/2021-10/2021	Maternity Leave (6 months)
03/2020-06/2020	COVID-19 complete loss of childcare (3 months)
06/2016-02/2017	Maternity leave (9 months)