

Levi Yant

Professor of Evolutionary Genomics

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ACADEMIC

- 2021-present Professor of Evolutionary Genomics (Personal Chair), **University of Nottingham** (UK).
We work on fundamental questions concerning the genomics of adaptation. We focus on the genomic basis of adaptation in polyploids and environmental adaptation.
- 2018-2021 Associate Professor, **University of Nottingham**.
- 2015-2018 Project leader, **John Innes Centre** (UK).
- 2015-2020 Associate, **Harvard University** (USA).
- 2013-2015 Group leader, **Harvard University**.
- 2010-2013 NIH NRSA Postdoctoral Fellow, **Harvard University**.
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EDUCATION

- 2006-2010 **Doctor rerum naturalium**. (*PhD, magna cum laude*), Developmental Genetics, Max Planck Institute for Developmental Biology and Eberhard Karls University, Tübingen, Germany. Thesis: "The complex flowering time network in *Arabidopsis*: genome-wide transcription factor target repertoires."
- 2004-2006 **Master of Science**, Cellular and Molecular Pathology, University of Wisconsin-Madison: Thesis: "'MHC class I-mediated protection against pathogenic AIDS viruses'"
- 1996-1999 **Master of Arts**, Philosophy, University of Toronto, Ontario, Canada
- 1992-1996. **Bachelor of Arts** (*magna cum laude*), Beloit College, Wisconsin
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AWARDED FUNDING

- 2024-2026 'ERC-CZ Consolidator' €830,000: Adaptive (mis)management of core processes promotes polyploid success (PI)
- 2021-2025 Leverhulme Trust £328,486 Research Grant: PREADAPT: revealing the basis of whole genome duplication-mediated adaptation (PI)
- 2021-2024 H2020-MSCA-IF-2020; 'POLYGARCH' €224,934 (Fellowship with Tuomas Härmälä)
- 2020-2021 GCRF Nottingham Interdisciplinary Research Award £249,165 (Co-I)
- 2016-2021 European Research Council €1,490,000 Starting Grant: Genomic hotspots of adaptation to whole genome duplication (PI)
- 2019 Future Food Beacon of Excellence £27,200 Salinity adaptation in wild Brassicas (PI)
- 2018 BBSRC Responsive Mode £553,514 The role of transposable elements in generating functional diversity (Co-I)
- 2017 JIC Institute Development Grant £21,400 Why do plants grow where they do? (PI)
- 2016 JIC Institute Development Grant £28,509 Genome-enablement of *Cochlearia*, an outstanding genome duplication and edaphic adaptation model in the Brassicaceae (PI)
- 2015 Norwich Research Park Science Links: £14,577 Reference genomes for the polyploid *Corydoras* catfish system to investigate the evolutionary impacts of polyploidization (PI)
- 2014-2016 National Science Foundation: \$300,000 Comparative Genomics of the Apple (PI)
- 2011-2014 National Institutes of Health: \$142,000 NIGMS Kirschstein National Research Award (PI)
- 2012 Harvard University: \$1,000 Postdoctoral award
- 2011 Harvard University: \$11,300 Putnam award
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PUBLICATIONS (6,862 citations; h-index = 36; i10-index = 53; recent preprints in review at end)

62. Busoms S, Perez-Martin L, Teres J, Huang X, **Yant L**, Tolra R, Salt D, Poschenrieder C (2023) Combined genomics to discover genes associated with tolerance to soil carbonate *Plant, Cell & Environment* <https://doi.org/10.1111/pce.14691>
61. Kolesnikova U, Scott A, Van de Velde J, Burns R, Tikhomirov N, Pfordt U, Clarke A, **Yant L**, Vekemans X, Laurent S, Novikova P (2023) Transition to Self-compatibility Associated With Dominant S-allele in a Diploid Siberian Progenitor of Allotetraploid *Arabidopsis kamchatica* Revealed by *Arabidopsis lyrata* Genomes, *Molecular Biology and Evolution* <https://academic.oup.com/mbe/article/40/7/msad122/7222474>.
60. Busoms S, Fischer S, **Yant L** (2023) Chasing the Mechanisms of Ecologically Adaptive Salinity Tolerance *Plant Communications*, <https://doi.org/10.1016/j.xplc.2023.100571>
59. Ware A, Jones D, Flis P, Smith K, Wilson M, Kumpers B, **Yant L**, Atkinson J, Wells D, Bhosale R, Bishopp A (2023) Loss of ancestral function in duckweed roots is accompanied by progressive anatomical reduction and a re-distribution of nutrient transporters. *Current Biology*, <https://doi.org/10.1016/j.cub.2023.03.025>.
58. Edwards A, Njaci I, Sarkar A, Jiang Z, Kaithakottil G, Moore C, Cheema J, Stevenson C, Rejzek M, Novak P, Vigouroux M, Vickers M, Wouters R, Paajanen P, Steurnagel B, Moore J, Higgins J, Swarbreck D, Martens D, Kim C, Weng J, Mundree S, Kilian B, Kumar S, Loose M, **Yant L**, Macas K, Wang T, Martin C, Emmrich P (2023) The grass pea (*Lathyrus sativus* L.) genome reveals novel enzyme activity involved in the biosynthesis of β -L-ODAP, the cause of neurolathyrism, *Nature Communications*, <https://www.nature.com/articles/s41467-023-36503-2>.
57. Chen X, Zhou M, **Yant L**, Huang C, (2022) Circular RNA in disease: Basic properties and biomedical relevance. *Wiley Interdisciplinary Reviews: RNA*, <http://doi.org/10.1002/wrna.1723>.
56. Bell E, Butler C, Oliveira O, Marburger S, **Yant L**, Taylor MI (2022) Transposable element annotation in non-model species: The benefits of species-specific repeat libraries using semi-automated EDTA and DeepTE de novo pipelines. *Molecular Ecology Resources*, <https://doi.org/10.1111/1755-0998.13489> .
55. Wolf EM, Gaquarel E, Scharmann M, **Yant L**, Koch MA (2021) Evolutionary footprints of a cold relic in a rapidly warming world. *eLife*, <https://elifesciences.org/articles/71572>.
54. Konečná V, Bray S, Vlček J, Bohutínská M, Požárová D, Choudhury R, Bollmann A, Flis P, Salt D, Parisod C, ***Yant L**, ***Kolář F** (2021) Serpentine adaptation in autopolyploid *Arabidopsis arenosa* is dominated by repeated recruitment of shared alleles. *Nature Communications*, (*co-corresponding). <https://rdcu.be/cutvo>.
53. Busoms S, Terés J, **Yant L**, Poschenrieder C, Salt DE (2021) Adaptation to coastal soils through pleiotropic boosting of ion and stress hormone levels in wild *Arabidopsis thaliana*. *New Phytologist*, <https://doi.org/10.1111/nph.17569>.
52. Su W, Jing Y, Lin S, Yue Z, Yang X, Xu J, Wu J, Zhang Z, Xia R, Zhu J, An N, Chen H, Hong Y, Yuan Y, Long T, Zhang L, Jiang Y, Liu Z, Zhang H, Gao Y, Liu Y, Lin H, Wang H, **Yant L**, Lin S, Liu Z, (2021) Polyploidy underlies co-option and diversification of biosynthetic triterpene pathways in the apple tribe. *PNAS*, <https://doi.org/10.1073/pnas.2101767118>.
51. Bohutínská M, Alston M, Monnahan P, Bray S, Paajanen P, Kolář F, ***Yant L** (2021) Novelty and convergence in adaptation to whole genome duplication. *Molecular Biology and Evolution*, <https://doi.org/10.1093/molbev/msab096>.
50. Vallejo-Marín M, Friedman J, Twyford AD, Lepais O, Ickert-Bond SM, Streisfeld MA, **Yant L**, van Kleunen M, Rotter MC, Puzey JR (2021) Population genomic and historical analysis reveals a global

invasion by bridgehead processes in *Mimulus guttatus*. *Communications Biology*, <https://doi.org/10.1038/s42003-021-01795-x>.

49. Bohutínská M, Handrick V, **Yant L**, Schmickl R, Kolář F, Bomblies K, Paajanen P (2021) De-novo mutation and rapid protein (co-)evolution during meiotic adaptation in *Arabidopsis arenosa*. *Molecular Biology and Evolution*, <https://doi.org/10.1093/molbev/msab001>. (Featured on the [Sept 2021 Cover](#))

48. Takou M, Hämälä T, Steige K, Koch E, Dittberner H, **Yant L**, Genete M, Sunyaev S, Vekemans X, Savolainen O, de Meux J (2021) Maintenance of adaptive dynamics in a bottlenecked range edge population that retained outcrossing. *Molecular Biology and Evolution*, <https://doi.org/10.1093/molbev/msaa322>.

47. Schmickl R, ***Yant L** (2020) Adaptive introgression: how polyploidy transforms gene flow landscapes. *New Phytologist* Tansley Insight invited perspective, <https://nph.onlinelibrary.wiley.com/doi/epdf/10.1111/nph.17204>.

46. Konečná V, ***Yant L**, ***Kolář F** (2020) The evolutionary genomics of serpentine adaptation. *Frontiers in Plant Science*, <https://www.frontiersin.org/articles/10.3389/fpls.2020.574616/pdf> (*co-corresponding).

45. Bell EA, Cable J, Oliveira C, Richardson DS, **Yant L**, Taylor MI (2020) Help or hinderance? Investigating the evolutionary impact of whole genome duplication on immunogenetic diversity and parasite load in *Corydoras* catfishes. *Ecology and Evolution*, <https://onlinelibrary.wiley.com/doi/epdf/10.1002/ece3.6987>.

44. Liu Z, Cheema J, Vigouroux M, Hill L, Reed J, Paajanen P, **Yant L**, Anne Osbourn (2020) Genetic basis for assembly and diversification of biosynthetic gene clusters in plants. *Nature Communications*, <https://www.nature.com/articles/s41467-020-19153-6.pdf>.

43. Seear P, France M, Gregory C, Heavens D, Schmickl R, ***Yant L**, ***Higgins J D** (2020) A novel allele of ASY3 is associated with greater meiotic stability in autotetraploid *Arabidopsis lyrata*. *PLOS Genetics*, <https://doi.org/10.1371/journal.pgen.1008900> (*corresponding).

42. Novikova P, Brennan IG, Booker W, Mahony M, Doughty P, Lemmon AR, Lemmon EM, **Yant L**, Van de Peer Y, Keogh JS, Donnellan SC (2020) Whole genome duplication potentiates inter-specific hybridisation and niche shifts in Australian burrowing frogs. *PLOS Genetics*, <https://doi.org/10.1371/journal.pgen.1008769>.

41. Marburger S, Monnahan P, Seear P, Martin S, Koch J, Paajanen P, Bohutínská M, Higgins J, Schmickl R, ***Yant L** (2019) Interspecific introgression mediates adaptation to whole genome duplication. *Nature Communications*, <http://dx.doi.org/10.1038/s41467-019-13159-5>.

40. Zhou M, Zheng S, Liu R, Lu J, Lu L, Zhang C, Zhang L, **Yant L**, Yu Wu (2019) The genome-wide impact of cadmium on microRNA and mRNA expression in contrasting Cd responsive wheat genotypes. *BMC Genomics*, <https://doi.org/10.1186/s12864-019-5939-z>.

39. Zhou M, Zheng S, Liu R, Lu J, Lu L, Zhang C, Liu Z, Luo C, Zhang L, **Yant L**, Yu Wu (2019) Genome-wide identification, phylogenetic and expression analysis of the heat shock transcription factor family in bread wheat (*Triticum aestivum* L.). *BMC Genomics*, <https://doi.org/10.1186/s12864-019-5876-x>.

38. Monnahan P, Kolář F, Baduel P, Sailer C, Koch J, Horvath R, Laenen B, Schmickl R, Paajanen P, Fuxová G, Holcová M, Arnold B, Weismann C, Marhold K, Slotte T, Bomblies K, ***Yant L** (2019) Pervasive population genomic consequences of genome duplication in *Arabidopsis arenosa*. *Nature Ecology & Evolution*, <http://dx.doi.org/10.1038/s41559-019-0807-4>, free at <https://rdu.be/borZY>.

37. Preite V, Sailer C, Syllwasschy L, Bray S, Krämer U, ***Yant L** (2019) Convergent evolution in *Arabidopsis halleri* and *Arabidopsis arenosa* on calamine metalliferous soils. *Phil Trans Roy. Soc. B*, <https://doi.org/10.1098/rstb.2018.0243>.

36. Busoms S, Paajanen P, Marburger S, Bray S, Huang X, Poschenrieder C, ***Yant L**, and ***Salt D** (2018) Ecological and population genomics reveals fluctuating selection on migrant adaptive sodium transporter alleles in coastal *Arabidopsis thaliana*. *PNAS*, <https://doi.org/10.1073/pnas.1816964115> (*corresponding).
35. Collani S, Neumann M, **Yant L**, Schmid M (2018) Effects of FLOWERING LOCUS T on FD during the transition to flowering at the shoot apical meristem of *Arabidopsis thaliana*. *Plant Physiology and on bioRxiv*, <https://doi.org/10.1101/483925>.
34. Baduel P, Bray S, Vallejo-Marin M, Kolář F, and ***Yant L** (2018) The ‘Polyploid Hop’: shifting challenges and opportunities over the evolutionary lifespan of genome duplications. *Frontiers in Ecology and Evolution*, <https://doi.org/10.3389/fevo.2018.00117>.
33. Schmickl R, Marburger S, Bray S, ***Yant L** (2017) Hybrids and horizontal transfer: introgression allows adaptive allele discovery. *Journal of Experimental Botany*, <https://doi.org/10.1093/jxb/erx297>.
32. ***Yant L** and ***Bomblies K** (2017) Genomic studies of adaptive evolution in outcrossing *Arabidopsis* species. *Current Opinion in Plant Biology*, <http://dx.doi.org/10.1016/j.pbi.2016.11.018> (*corresponding).
31. Arnold B, DaCosta J, Lahner B, Weisman C, Hollister JD, Salt DE, Bomblies K, ***Yant L** (2016) Borrowed genes and convergence: serpentine adaptation in the face of inter- and intraspecific gene flow. *PNAS*, <https://doi.org/10.1073/pnas.1600405113>.
30. Pose D and ***Yant L** (2016) CHIP-seq in plants. *Plant Signal Transduction, Methods Mol Biol*. https://doi.org/10.1007/978-1-4939-3115-6_3.
29. ***Yant L** and ***Bomblies K** (2015) Genome management and mismanagement – cell-level problems and opportunities of whole genome duplication. *Genes and Development*, <https://doi.org/10.1101/gad.271072.115>. (*co-corresponding).
28. Bomblies K, Higgins J, **Yant L** (2015) Meiosis Evolves: Adaptation to external and internal environments. *Tansley Review, New Phytologist*, <https://doi.org/10.1111/nph.13499>.
27. **Yant L** (2015) When two is a crowd: mitochondrial genome merger and its aftermath. *New Phytologist*, <https://doi.org/10.1111/nph.13321>.
26. **Yant L**, Collani S, Puzey J, Levy C, EM Kramer (2015) Molecular basis for three-dimensional elaboration of the *Aquilegia* petal spur. *Proc. Roy. Soc. B*, <https://doi.org/10.1098/rspb.2014.2778>.
25. Sharma B, **Yant L**, Hodges S, Kramer E (2014) Understanding the development and evolution of novel floral form in *Aquilegia*. *Current Opinion in Plant Biology*, <https://doi.org/10.1016/j.pbi.2013.10.006>.
24. **Yant L**, Hollister JD, Wright K, Arnold BJ, Higgins JD, Franklin FCH, Bomblies K (2013) Meiotic adaptation to a genome doubled state in *Arabidopsis arenosa*. *Current Biology*, <https://doi.org/10.1016/j.cub.2013.08.059>.
(An Editors’ Pick in *Science* and featured in a Dispatch in same issue of *Current Biology*)
23. Posé D, Verhage L, Ott F, **Yant L**, Mathieu J, Angenent GC, Immink RGH, Schmid M (2013) Temperature-dependent regulation of flowering by antagonistic FLM variants. *Nature*, <https://doi.org/10.1038/nature12633>.
(Featured in a Perspective in *Science*)
22. Dinh TT, Girke T, Liu X, **Yant L**, Schmid M, Chen X (2012) The floral homeotic protein APETALA2 recognizes and acts through an AT-rich sequence element. *Development*, <https://doi.org/10.1242/dev.077073>.

21. **Yant L** (2012) Genome-wide mapping of transcription factor binding reveals developmental process integration and a fresh look at evolutionary dynamics. *American Journal of Botany*, <https://doi.org/10.3732/ajb.1100333>.
20. Salomé PA, Bomblies K, Fitz J, Laitinen R, Warthmann N, **Yant L**, Weigel D (2011) The recombination landscape in *Arabidopsis thaliana* F₂ populations. *Heredity*. <https://doi.org/10.1038/hdy.2011.95>.
19. Pose D, **Yant L**, Schmid M (2011) The end of innocence: flowering networks explode in complexity. *Current Opinion in Plant Biology*, <https://doi.org/10.1016/j.pbi.2011.09.002>, equal contribution
18. Moyroud E, Gomez-Minguet E, Ott F, **Yant L**, Pose-Padilla D, Blanchet S, Monniaux M, Bastien O, Thévenon E, Weigel D, Schmid M, Parcy F (2011) Prediction of regulatory interactions from genome sequences using a biophysical model for the *Arabidopsis* LEAFY transcription factor. *Plant Cell*, <https://doi.org/10.1105/tpc.111.083329>. (April 2011 Cover)
17. Salomé PA, Bomblies K, Laitinen R, **Yant L**, Mott R, Weigel D (2011) Genetic architecture of flowering time variation in *Arabidopsis thaliana*. *Genetics*, <https://doi.org/10.1534/genetics.111.126607>. (June 2011 Cover)
16. **Yant L**, Mathieu J, Dinh TT, Ott F, Wollman H, Chen X, Schmid M (2010) Orchestration of the floral transition and floral development by the bifunctional transcription factor APETALA2. *Plant Cell*, <https://doi.org/10.1105/tpc.110.075606>.
15. Bomblies K, **Yant L**, Laitinen R, Kim, ST, Weigel D (2010) Local-scale patterns of genetic variability, outcrossing, and spatial structure in natural stands of *Arabidopsis thaliana*. *PLOS Genetics*, <https://doi.org/10.1371/journal.pgen.1000890>.
14. **Yant L**, Mathieu J, Schmid M (2009) Just say “no”: floral repressors help *Arabidopsis* bide the time. *Current Opinion in Plant Biology*, <https://doi.org/10.1016/j.pbi.2009.07.006>.
13. Mathieu J, **Yant LJ**, Mürdter F, Küttner F, Schmid M (2009) Repression of flowering by the miR172 target SMZ. *PLOS Biology* 7, <https://doi.org/10.1371/journal.pbio.1000148>.
12. Maness NJ, **Yant LJ**, Chung C, Friedrich TC, Piaskowski SM, Furlott J, May GE, Soma T, Leon EJ, Wilson NA, Piontkivska H, Hughes AL, Sidney J, Sette A, Watkins DI (2008) Comprehensive immunological evaluation of elite controller and progressor, Mamu-B*17-positive SIV-infected rhesus macaques reveals surprisingly few differences. *Journal of Virology* 82, 5245.
11. Friedrich TC, Valentine LE, **Yant LJ**, Rakasz EG, Piaskowski SM, Furlott JR, Weisgrau KL, Burwitz B, May GE, León EJ, Soma T, Napoe G, Capuano III SV, Wilson N, Watkins DI (2007) Subdominant CD8+ T-cell responses are involved in durable control of AIDS virus replication. *Journal of Virology* 81, 3465.
10. Wojcechowskyj JA, **Yant LJ**, Wiseman RW, O'Connor DH (2007) Control of SIVmac239 is not predicted by inheritance of Mamu-B*17-containing haplotypes. *Journal of Virology* 81, 406.
9. Wilson NA, Reed J, Napoe GS, Piaskowski S, Szymanski A, Furlott J, Gonzalez EJ, **Yant LJ**, Maness NJ, May GE, Soma T, Reynolds MR, Rakasz E, Rudersdorf R, McDermott AB, O'Connor DH, Friedrich TC, Allison DB, Patki A, Picker LJ, Burton DR, Lin J, Huang L, Patel D, Heindecker G, Fan J, Citron M, Horton M, Wang F, Liang X, Shiver JW, Casimiro DR, Watkins DI (2006) Vaccine-induced cellular immune responses reduce plasma viral concentrations after repeated low-dose challenge with pathogenic simian immunodeficiency virus SIVmac239. *Journal of Virology* 80, 5875.
8. **Yant LJ**, Friedrich TC, Johnson RC, May G, Maness NJ, Enz AM, Lifson J, O'Connor DH, Carrington M, Watkins DI (2006) The high frequency MHC class I allele Mamu-B*17 is associated with control of SIVmac239 replication. *Journal of Virology* 80, 5074, <https://doi.org/10.1128/JVI.80.10.5074-5077.2006>.

7. Loffredo JT, Rakasz EG, Giraldo JP, Spencer SP, Grafton KK, Martin SR, Napoe G, **Yant LJ**, Wilson NA, Watkins DI (2005) Tat(28-35)SL8-specific CD8+ T lymphocytes are more effective than Gag(181-189)CM9-specific CD8+ T lymphocytes at suppressing simian immunodeficiency virus replication in a functional in vitro assay. *Journal of Virology* 79, 14986.
6. O'Connor DH, McDermott AB, Krebs KC, Dodds EJ, Miller JE, Gonzalez EJ, Jacoby TJ, **Yant LJ**, Piontkivska H, Pantophlet R, Burton DR, Rehrauer WM, Wilson N, Hughes AL, Watkins DI (2004) A dominant role for CD8+-T-lymphocyte selection in simian immunodeficiency virus sequence variation. *Journal of Virology* 78, 14012.
5. Friedrich TC, McDermott AB, Reynolds MR, Piaskowski S, Fuenger S, de Souza IP, Rudersdorf R, Cullen C, **Yant LJ**, Vojnov L, Stephany J, Martin S, O'Connor DH, Wilson N, Watkins DI (2004) Consequences of cytotoxic T-lymphocyte escape: common escape mutations in simian immunodeficiency virus are poorly recognized in naive hosts. *Journal of Virology* 78, 10064.
4. McDermott AB, Mitchen J, Piaskowski S, De Souza I, **Yant LJ**, Stephany J, Furlott J, Watkins DI (2004) Repeated low dose mucosal SIVmac239 challenge results in the same viral and immunological kinetics as high dose challenge; a model for the evaluation of vaccine efficacy in non-human primates. *Journal of Virology* 78, 3140.
3. Friedrich TC, Dodds E, **Yant LJ**, Rudersdorf R, Cullen C, Evans ET, Desrosiers RC, Mothé BR, Sidney J, Sette A, Kunstman K, Wolinsky S, Piatak M, Lifson J, Wilson N, O'Connor DH, Watkins DI (2004) Reversion of cytotoxic T-lymphocyte (CTL) escape variant immunodeficiency viruses *in vivo*. *Nature Medicine* 10, 275, <https://doi.org/10.1038/nm998>.
2. Friedrich TC, Frye CA, **Yant LJ**, O'Connor DH, Kriewaldt N, Benson M, Dodds EJ, Cullen C, Rudersdorf R, Hughes AL, Wilson N, Watkins DI (2004) Extra-epitopic compensatory substitutions restore fitness to simian immunodeficiency virus variants that escape from an immunodominant cytotoxic T-lymphocyte response. *Journal of Virology* 78, 2581.
1. **Yant LJ**, Ran Q, Rao L, Van Remmen H, Shibatani T, Belter JG, Motta L, Richardson A, Prolla TA (2003) The selenoprotein GPX4 is essential for mouse development and protects from radiation and oxidative damage insults. *Free Radical Biology and Medicine* 34, 496, [https://doi.org/10.1016/s0891-5849\(02\)01360-6](https://doi.org/10.1016/s0891-5849(02)01360-6).

Preprints (also in review or revision)

- 65 Hämälä T, Moore C, Cowan L, Carlile M, Gopaulchan D, Brandrud MK, Birkeland S, Loose M, Kolář F, Koch MA, **Yant L** (2023) Impact of whole-genome duplications on structural variant evolution in the plant genus *Cochlearia* <https://doi.org/10.1101/2023.09.29.560073> *In review, Nature Communications*
64. Bray SM, Hämälä T, Zhou M, Busoms S, Fischer S, Desjardins SD, Mandakova T, Moore C, Mathers TC, Cowan L, Monnahan P, Koch J, Wolf EM, Lysak MA, Kolar F, Higgins JD, Koch MA, **Yant L** (2023) Kinetochores and ionomic adaptation to whole genome duplication <https://doi.org/10.1101/2023.09.27.559727> *In review, Cell Reports*
63. Smith K, Zhou M, Flis P, Jones D, Bishopp A, **Yant L** (2023) The evolution of the duckweed ionome mirrors losses in structural complexity <https://www.biorxiv.org/content/10.1101/2023.09.22.558936v1> *In revision, Annals of Botany*
62. Repeated adaptation to whole genome duplication in wild outcrossing *Arabidopsis* species is mediated by mosaic adaptive haplotypes (2023) Bohutínská M, Petříková E, Booker T, Cobo C, Vlček J, Šrámková G, Poštulková A, Hojka J, Marhold K, **Yant L***, Kolář F*, Schmickl R* (*=equal contribution) <https://www.biorxiv.org/content/10.1101/2023.01.11.523565v1> *In submission, Evolution Letters*
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SELECTED INVITED SEMINARS

- 2023 **Nanjing Agricultural University** Plant Science seminar, Nanjing, China (November 6).
 2023 **Shanghai Jiao Tong University**, Cell and Developmental biology Seminar, Shanghai, China (November 3).
- 2023 **University of Bonn** Evolution and Plant Science seminar, Bonn, Germany (June 1).
 2023 **Keynote Lecture** Annual Amazon Conference: Heritage, Biodiversity and Environment, Tena, Ecuador (April 24)
- 2022 **British Meiosis Meeting** Leicester, UK (May 3)
 2022 **Imperial College London** Department of Life Sciences Seminar, London, UK (March 31)
 2021 **University of Zürich** Institute for Evolutionary Botany, Zürich, Switzerland (May 17)
 2021 **University of Vienna** Minisymposium Systematic and Evolutionary Botany (April 30)
 2019 **Genome Biology Theme Day EPS Keynote** Wageningen, Netherlands (Dec 13)
 2019 **Plant Biology 2019 CS** University of South Bohemia, Czech Republic (Aug 27)
 2019 **Network for Food Security** Shanghai Jiao Tong University, China (July 19)
 2019 **International Conference on Polyploidy** VIB Ghent, Belgium (June 12)
 2019 **British Council, Beijing China** Pint of Science Public Lecture (March 12)
 2019 **Plant and Animal Genome (PAG)** Genomics of Phytoremediators, Metal Accumulators and Relatives, San Diego, CA, USA (Jan 16)
- 2019 **Popgroup 52** Oxford, UK (Jan 5)
 2018 **University of Bern**, Institute of Plant Sciences, Bern, Switzerland (Sept 17)
 2018 **Future Foods Beacon** Day, University of Nottingham, Nottingham, UK (July 16)
 2018 **Kihara Institute for Biological Research**, Yokohama City University, Japan (July 13)
 2018 **Society for Molecular Biology and Evolution**, Yokohama, Japan (July 9)
 2018 **Chinese Academy of Sciences**, Evolutionary Genetics Seminar, Beijing, China (July 3)
 2018 **KEMRI Wellcome Trust**, Evolution Seminar, Pwani, Kenya (June 13)
 2018 **Pwani University**, PUBReC Seminar, Pwani, Kenya (June 8)
 2018 **Oxford University** Plant Sciences Departmental Seminar, Oxford, UK (May 24)
 2018 **Max Plank Institute MIKO and Arabis** meeting closing talk, Cologne, Germany (Feb 7)
 2018 **University of Arizona**, Plant Sciences Department seminar Tucson, AZ, USA (Jan 16)
 2018 **Plant and Animal Genome (PAG)** Cytogenetics session, San Diego, CA, USA (Jan 14)
 2018 **Popgroup 51** Bristol, UK (Jan 4)
 2017 **Keynote Lecture** Universidad Autónoma de Barcelona, Spain (October 10)
 2017 **21st Evolutionary Biology Meeting** Marseilles France (September 26)
 2017 **International Conference on Arabidopsis Research** St. Louis Missouri, USA (June 22)
 2017 **University of Stirling** Department of Biology seminar, Stirling, UK (April 3)
 2017 **Postdoc Retreat Career Day Speaker** Norwich, UK (February 26)
 2017 **University of Nottingham**, Nottingham, UK (January 18)
- 2016 **Cambridge University** GARNet NatVar 2016 Meeting, Cambridge UK (December 13)
 2016 **Science Away Day Norwich Research Park**, Norwich UK (December 9)
 2016 **Prague Charles University**, Academy of Sciences, Prague CZ (December 6)
 2016 **GRO ISP Seminar, John Innes Centre** Norwich UK (September 19)
 2016 **Society for Experimental Biology** (Session Chair and Speaker), Brighton UK (July 4)
 2016 **University of East Anglia** Centre for Ecology, Norwich, UK (June 29)
 2016 **Polyploidy, Hybridization and Biodiversity** Rovinj, Croatia (May 12)
 2016 **University of East Anglia** Centre for Ecology, Norwich, UK (April 12)
 2016 **Cambridge University** Evolutionary Genetics and Genomics, Cambridge, UK (March 15)
 2016 **University of East Anglia** CEEC Rebellion (Plenary speaker), Norwich, UK (March 14)
 2016 **ELSA** Adaptation meeting Norwich, UK (February 25)
- 2015 **Molecular Basis of Plant Evolutionary Innovations** Cologne, Germany (November 9)
 2015 **Plant Genome Evolution** Amsterdam, Netherlands (September 9)
 2015 **26th International Conference on Arabidopsis Research** Paris, France (July 8)
 2015 **University of Vienna**, Department for Botany Research Vienna, Austria (April 8)
 2014 **John Innes Centre** Norwich, UK (December 16)
 2014 **Langebio National Laboratory** of Genomics for Biodiversity Mexico (December 9)
 2014 **Harvard University** Herbarium Seminar, Cambridge MA (November 2)
 2014 **Plant and Animal Genome XXII** Conference San Diego, C.A., (January 12)
 2013 **Cornell University** Plant Biology Seminar, Ithaca NY (December 6)

2013 **Harvard University** Museum of Comparative Zoology, Cambridge MA (December 2)
 2012 **University of Massachusetts**, Department of Biology, Amherst MA (December 18)
 2012 **Wood's Hole Society** for Developmental Biology, Wood's Hole CT (April 14)
 2011 **Cold Spring Harbor Laboratory** NY (August 30)
 2010 **Whitehead Institute**, Cambridge MA (December 1)
 2010 **Harvard University** Herbarium Seminar, Cambridge MA (September 21)

HONORS AND AWARDS

2019 Nominated for the Nottingham Research Leaders Programme, participating in strategic partnering exercises and professional development in Ningbo, China.
 2019 Nominated Delegate, Nottingham delegation for strategic partnerships at University of Heidelberg and University of Tübingen.
 2019 Nominated Delegate, Nottingham delegation for strategic partnerships at Fudan University, Shanghai Jiao-tong University, Nanjing University, and partnering at the British Embassy, Shanghai, China.
 2018 Promoted to the Leadership Team of Nottingham's Future Food Beacon of Excellence
 2015-2021 ERC Starting Grant Award
 2012 Harvard University Award for Professional Development
 2011-2014 National Institutes of Health, National Research Service Award for Postdoctoral Fellows
 2011-2012 Putnam Fellowship, Arnold Arboretum of Harvard University
 2010 Dr. rerum naturum: magna cum laude (PhD)
 2006 Keystone Symposium Travel Grant
 2004-2005 Award for top graduate student (Dept. of Pathology, University of Wisconsin)
 1996 Master of Arts (magna cum laude)
 1992-1995 Dean's List (Beloit College)
 1996-1998 Full Graduate Fellowship (University of Toronto)
 1995 Horace White Prize for top undergraduate in major field (Beloit College)
 1992-1995 Merit Fellowships (Beloit College)
 1993 PEW Summer Science Fellowship (University of Chicago)

UNIVERSITY STRATEGIC INTERNATIONAL PARTNERING ACTIVITIES AND COMMITTEE SERVICE

2019- 2021 Member, Strategic Research Committee, School of Life Sciences.
 2019- present Member, Management Committee of the University of Nottingham Sequencing Core.
 2019 Delegate, Nottingham delegation for strategic partnerships at University of Heidelberg and University of Tübingen.
 2019 Delegate, Nottingham delegation for strategic partnerships at Fudan University, Shanghai Jiao-tong University, Nanjing University, and partnering at the British Embassy, Shanghai, China.
 2019 Member, Nottingham Research Leaders Programme (strategic partnering in Ningbo, China).
 2019 Organizer, Network for Food Security trilateral China, UK, France symposium, Shanghai China.

TEACHING AND MENTORING

Teaching in the UK

2023 **LIFE4141. Population Genomics** (Nottingham). Full-time MSc, Theoretical and Practical Population Genomics. Using R, python, and reproducibility in HPC environments
 2021-2023 **LIFE4136. Bioinformatics Group Research Projects** (Nottingham). Full-time MSc, focused on group working around a substantial problem in bioinformatics. R, python, and reproducibility in HPC environments.
 2021-2023 **LIFE4137. Bioinformatics Individual Research Projects** (Nottingham). As above, as advanced individual research projects for a full semester.

2020-2022 **Evolutionary Genomics** (Nottingham). Case studies in evolutionary genomics and practical bioinformatics module for DTP training week. Awarded excellent reviews (4.5/5.0) by students.

Teaching International Training Courses

2023 **Bioinformatics/Population Genomics** (Shanghai Jiao Tong University, China)
Theoretical and Practical Population Genomics focusing on reproducibility

2019 **Genomics in Plant sciences** (Kilifi, Kenya). Interactive seminars on developing scientific questions and proposal writing. Also gave 'soft skills' workshops.

2018 **'Innovations in Agriculture and Food for Healthy Societies'** (Shanghai, China). Lead workshops on challenge-based interdisciplinary thinking in an international context to deliver ethical and equitable solutions to global challenges and mentored Chinese and European students.

2014-2015 **Next Generation Sequencing 101**: Massively parallel RNA and DNA sequencing (Harvard University), ^{****}. This course covered *de novo* genome assembly, resequencing and scanning for signatures of selection in non-model systems.

2013-2015 **International Masters Program Mentor** (Harvard University, MEME)
-Genomics laboratory mentoring of two graduate students, focusing on obtaining genomic information in non-model systems by a variety of next generation approaches

2011-2014 **Senior Honors Thesis Co-mentor** (Harvard University)
-Investigated the effects of climate change on developmental timing in diverse wild plant species and initiated development of several as potential model laboratory systems
-Performed genome-wide transcriptional profiling of a temperature tracking species, along with phenological profiling of species' responses to climate change

2011-2015 **High School Student Mentor** (Cambridge Rindge School and Harvard University)
-Involved high school and Harvard students in bioinformatics of genome-scale variation
-Exposed students to the diversity of possibilities in bioinformatics and wet lab research

2011-2012 **Head Teaching Fellow**, Organismic and Evolutionary Biology (Harvard University)
-Developed curricula, coordinated, and taught sections of a class of 146 students
-Coordinated and oversaw the efforts of 7 graduate teaching fellows
-Awarded excellent reviews by students (4.5/5.0)

Advising – Fellows, Postdoctoral Scholars, Graduate students and Research Associates

2022-2023 Ana da Silva (postdoc)

2021- present Raziyeh Abdilzadeh (Leverhulme postdoc)

2021- present Tuomas Hämälä (Marie Curie postdoc)

2020- present Emma Curran (ERC and Leverhulme postdoc)

2019- present Matthew Heatley (ERC postdoc)

2019-2020 Cindy Callens (ERC postdoc)

2018- present Sina Fisher (Research Fellow)

2018- present Gabriel Castrillo (Research Fellow; **now Associate Professor, U Nottingham**)

2016-2019 Silvia Busoms (Postdoc; **now Associate Professor, U Barcelona**)

2016-2019 Pirita Paajanen (ERC postdoc)

2015-2019 Christian Sailer (Harvard and SNF Fellow)

2017-2019 Mark Alston (ERC postdoc)

2016-2019 Sian Bray (ERC postdoc; **now Assistant Professor, U Nottingham**)

2016-2018 Mellieha Allen (undergraduate)

2016-2018 Giulia Chiappa (RA)

2016-2017 Jordan Koch (ERC RA)

2016-2017 Patrick Monnahan (ERC postdoc; now postdoc, U Minnesota, Brandvain lab)

2016-2017 Laura Hebberecht (RA; now Graduate Student Cambridge University)

2015-2017 Sarah Marburger (postdoc)

2014-2016 Jeffery DeCosta (Harvard postdoc; **now Assistant Professor, Boston College**)

Advising – Graduate students

2021 Samuel Wadey (internal examiner)
 2021 Akinkunmi Akinjanju (internal examiner)
 2021-present Sebastián Gardia Daga (UoN/Adeladee joint PhD student. Secondary supervisor)
 2019-present Kellie Smith (UoN PhD student. Primary supervisor)
 2016-2019 Anita Bollman (JIC PhD student. Primary supervisor)
 2016-2018 Zhenhua Liu (JIC PhD student. Secondary supervisor)
 2017-2018 Sigfried Leher (JIC PhD. Secondary supervisor)
 2016-2018 Mabon Elis (JIC. Secondary supervisor)

Advising - Undergraduate honors thesis students

2014-2015 John Pulice (Harvard)
 2012-2013 Courtland Kelly (Harvard)
 2011-2012 Kimberly O'Donnell (Harvard)

Advising - High School students

2011-2012 Imtiyaz Hossain (Harvard)

PROFESSIONAL TRAINING

2021 Gained **Advanced Fellow status of the Higher Education Academy (AFHEA)** of the UK. In recognition of attainment against the UK Professional Standards Framework for teaching and learning support in higher education (Reference PR224504).
 2018 Hfp Leadership and Management Skills Course for Senior Managers in Science (3 days)

COMMUNITY

2022 **Session Organizer: ESEB symposium on Polyploidy** Prague (August 16)
 2019 **Session Chair: SMBE symposium on Extremophile Eukaryotes** Manchester, UK (July 23)
 2019 **Session Chair: Network for Food Security** Shanghai Jao Tong University, China (July 19)
 2017 **Organizer:** "The Molecular Mechanisms of Adaptation" Earth and Life Systems Alliance Workshop (ELSA) (7th April) at The University of East Anglia, Norwich U.K.
 2016 **Organizer:** "Adaptation and Genome Dynamics across Species and Kingdoms" ELSA Workshop (25th February) at The John Innes Centre, Norwich U.K.

ACTIVE COLLABORATIONS

Markus Koch, U Heidelberg, Germany	Karol Marhold, Charles University, Prague C.Z.
Filip Kolář, Charles University, Prague C.Z.	Zhenhua Liu, Shanghai Jiao Tong U, China
Rose Kigathi, Pwani University, Kilifi, Kenya	Alexander Papadopoulos, U Bangor, U.K.
James Higgins, University of Leicester, U.K.	Todd Michaels, Salk Institute, USA
Roswitha Schmickl, Charles U, Prague C.Z.	

SERVICE (EXTERNAL)

Editorial service: Member, Editorial Boards of *Plant Communications* (Cell press) and *Frontiers in Plant Science*

Panel review boards: BBSRC Institute Assessment Panel of the Earlham Institute, Swedish Research Council (Consolidator Grant Panel Member), Slovak Academy of Sciences (Projekt Impulz Panel Member)

External PhD examiner: Primary External Opponent at University of Aberdeen, Universitat Autònoma de Barcelona, The University of the West Indies, and The University of Oslo (2015-2021)

- Proposal review: ERC, BBSRC, The Royal Society, NERC, Leverhulme Trust, National Science Foundation, Grantová Agentura České Republiky, FWF Austrian Science Fund, FWO Flanders Research Foundation, BARD Israeli-American Grants, Israeli Science Foundation (ISF) Grants
- Manuscript review: *Nature Genetics, PNAS, Current Biology, Nature Communications, Nature Ecology and Evolution, PLOS Genetics, Nucleic Acids Research, Molecular Biology and Evolution, The Plant Cell, Genome Biology and Evolution, Heredity, Molecular Ecology, BMC Genomics, New Phytologist, Current Opinion in Plant Biology, Plant and Cell Physiology, Scientific Reports, American Journal of Botany, Frontiers in Plant Evolution and Development, Molecular Plant.*
- External review: University of Lyon (<http://biologie.ens-lyon.fr/masterbiosciences>)

PATENT

“Improved HIV Vaccine Designed to Induce Broad Immune Response Against Subdominant Antigens” A novel approach to broaden and strengthen cellular immune responses for a global AIDS vaccine. Serial number P06251 12/022530
