

JAMES D THOMAS

Washington Research Foundation Fellow
Robert K. Bradley lab
Fred Hutchinson Cancer Research Center
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EDUCATION

2017 University of Florida
Ph.D., Medical Sciences – concentration in genetics

2012 University of Florida
B.S., Biology with Highest Honors

RESEARCH POSITIONS

Postdoctoral Fellow Fred Hutchinson Cancer Research Center 2017-
Computational Biology Program, Public Health Sciences Division
Advisor: Robert K. Bradley, PhD

Graduate Student University of Florida 2012-2017
Center for NeuroGenetics
Advisor: Maurice S. Swanson, PhD

HONORS & AWARDS

2019-2021 Washington Research Foundation Postdoctoral Fellowship

2017 Promise to Kate Trainee Award

2017 International Myotonic Dystrophy Consortium Trainee Award

2017 Silver Medal, University of Florida Medical Guild Research Competition

2017 Top Abstract, Advances in Skeletal Muscle Biology in Health & Disease Conference

2014 Scholarship, 3rd Annual Myology Training Course, Ohio State University

2013 Scholarship, 18th Summer Institute in Statistical Genetics, Seattle, WA

2012 Highest Honors, University of Florida

2008-2012 Bright Futures Florida Academic Scholar, University of Florida

PUBLICATIONS (lead author)

1. Lu SX*, De Neef E*, **Thomas JD***, Sabio E, Rousseau B, Gigoux M, Knorr DA, Greenbaum B, Elhanati Y, Hogg SJ, Chow A, Ghosh A, Xie A, Zmarin D, Cui D, Erickson C, Singer M, Cho H, Wang E, Lu B, Durham BH, Shah H, Chowell D, Gabel AM, Shen Y, Liu J, Jin J, Rhodes MC, Taylor RE, Molina H, Wolchok J, Merghoub T, Diaz LA, Abdel-Wahab O, Bradley RK (2021). Pharmacologic modulation of RNA splicing enhances anti-tumor immunity. *Cell*. doi: 10.1016/j.cell.2021.05.038 [PMID: 34171309] ***equal contribution**
2. Parrish PCR*, **Thomas JD***, Gabel AM, Kamlapurkar S, Bradley RK, Berger AH (2021). Discovery of synthetic lethal and tumor suppressor paralog pairs in the human genome. *Cell Reports*. doi: 10.1016/j.celrep.2021.109597 [PMID: 34469736] ***equal contribution**
3. **Thomas JD**, Polaski JT, Feng Q, De Neef EJ, Hoppe ER, McSharry MV, Pangallo J, Gabel AM, Belleville AE, Watson J, Nkinsi NT, Berger AH, Bradley RK (2020). RNA isoform screens uncover the essentiality and tumor suppressor activity of ultraconserved poison exons. *Nature Genetics*. doi: 10.1038/s41588-019-0555-z [PMID: 31911676]

Thomas, JD. (2020, January 15). You need poison (exons) to live. *Nature Cancer Research Community*. <https://go.nature.com/2ssolRT>

4. Sznajder ŁJ*, **Thomas JD***, Carrell E, Reid T, McFarland K, Cleary J, Oliveira RS, Nutter C, Bhatt K, Sobczak K, Ashizawa T, Thornton C, Ranum LW, Swanson MS (2018). Intron retention induced by microsatellite expansions as a disease biomarker. *PNAS*. doi: 10.1073/pnas.1716617115 [PMID: [29610297](#)] ***equal contribution**
5. **Thomas JD**, Oliveira RS, Sznajder ŁJ, Swanson MS (2018). Myotonic dystrophy and developmental regulation of RNA processing. *Comprehensive Physiology*. doi: 10.1002/cphy.c170002 [PMID: [29687899](#)]
6. Iradi MCG*, Triplett JC*, **Thomas JD***, Davila R., Crown AM, Brown H, Lewis J, Swanson MS, Xu G, Rodríguez-Lebrón E, Borchelt DR (2018). Characterization of gene regulation and protein interaction networks for Matrin 3 encoding mutations linked to amyotrophic lateral sclerosis and myopathy. *Scientific Reports*. doi: 10.1038/s41598-018-21371-4 [PMID: [29511296](#)] ***equal contribution**
7. **Thomas JD**, Sznajder ŁJ, Bardhi O, Aslam FN, Anastasiadis ZP, Scotti MM, Nishino I, Nakamori M, Wang ET, Swanson MS (2017). Disrupted prenatal RNA processing and myogenesis in congenital myotonic dystrophy. *Genes & Development*. doi: 10.1101/gad.300590.117 [PMID: [28698297](#)]

PUBLICATIONS (contributing author)

8. North K, Benbarche S, Liu B, Pangallo J, Chen S, Stahl M, Bewersdorf JP, Stanley RF, Erickson C, Cho H, Pineda JMB, **Thomas JD**, Polaski JT, Belleville AE, Gabel AM, Udy DB, Humbert O, Kiem H-P, Abdel-Wahab O, Bradley RK (2022). Synthetic introns enable splicing factor mutation-dependent targeting of cancer cells. *Nature Biotechnology*. [in press]
9. Vichas A, Riley AK, Nkinsi NT, Kamlapurkar S, Parrish PCR, Lo A, Duke F, Chen J, Fung I, Watson J, Rees M, Gabel AM, **Thomas JD**, Bradley RK, Lee JK, Hatch EM, Baine MK, Rekhtman N, Ladanyi M, Piccioni F, Berger AH (2021). Integrative oncogene-dependency mapping identifies RIT1 vulnerabilities and synergies in lung cancer. *Nature Communications*. doi: 10.1038/s41467-021-24841-y [PMID: [34373451](#)]
10. Batra R, Nelles DA, Roth DM, Krach F, Nutter CA, Tadokoro T, **Thomas JD**, Sznajder ŁJ, Blue SM, Gutierrez H, Liu P, Aigner S, Platoshyn O, Miyanohara A, Marsala M, Swanson MS, Yeo GW (2020). The sustained expression of Cas9 targeting toxic RNAs reverses disease phenotypes in mouse models of myotonic dystrophy type 1. *Nature Biomedical Engineering*. doi: 10.1038/s41551-020-00607-7 [PMID: [32929188](#)]
11. Skruber K, Warp PV, Shklyarov R, **Thomas JD**, Swanson MS, Henty-Ridilla JL, Read TA, Vitriol EA (2020). Arp2/3 and Mena/VASP require Profilin 1 for Actin Network Assembly at the Leading Edge. *Current Biology*. doi: 10.1016/j.cub.2020.04.085 [PMID: [32470361](#)]
12. Li M, Zhuang Yan, Batra R, **Thomas JD**, Li M, Nutter CA, Scotti MM, Carter HA, Wang ZJ, Huang X-S, Pu CQ, Swanson MS, Xie W (2020). HNRNPA1-induced spliceopathy in a transgenic mouse model of myotonic dystrophy. *PNAS*. doi: 10.1073/pnas.1907297117 [PMID: [32086392](#)]
13. Taylor K, Sznajder ŁJ, Cywoniuk P, **Thomas JD**, Swanson MS, Sobczak K (2018). MBNL splicing activity depends on RNA binding site structural context. *Nucleic Acids Research*. doi: 10.1093/nar/gky565 [PMID: [29955876](#)]

14. Li J, Deng S, Vieira J, **Thomas JD**, Costa V, Tseng C, Ivanković F, Ciccodicola A, Peng Y (2018). RBPMetaDB: A comprehensive annotation of mouse RNA-Seq datasets with perturbations of RNA-binding proteins. *Database*. doi: 10.1093/database/bay054 [[PMID: 29931156](#)]
15. Nakamori M, Hamanaka K, **Thomas JD**, Wang ET, Hayashi YK, Takahashi MP, Swanson MS, Nishino I, Mochizuki H (2017). Aberrant CpG methylation and myokine signaling in congenital myotonic dystrophy. *Cell Reports*. doi: 10.1016/j.celrep.2017.10.018 [[PMID: 29091763](#)]
16. Batra R, Nelles DA, Pirie E, Blue S, Marina RJ, Wang H, Chaim AI, **Thomas JD**, Zhang Nigel, Ngyuen V, Aigner S, Xia G, Swanson MS, Yeo GW (2017). Elimination of toxic microsatellite expansion RNA by RNA-targeting Cas9. *Cell*. doi: 10.1016/j.cell.2017.07.010 [[PMID: 28803727](#)]
17. Dafoe NJ, **Thomas JD**, Shirk PD, Legaspi ME, Vaughan MM, Huffaker A, Teal PE, Schmelz EA (2013). European corn borer (*Ostrinia nubilalis*) induced responses enhance susceptibility in maize. *PLoS One*. doi: 10.1371/journal.pone.0073394 [[PMID: 24023868](#)]

TALKS

Functional genomics at RNA isoform resolution

- American Society of Human Genetics Meeting (2021)
- RNA Society Meeting (2021)
- The RNA Institute Mini Symposium; University of Albany (2021)
- eLife Community Early-Career Researcher Online Research Talks (2020)
- 4th International Brainstorm Symposium; Gainesville, Florida (2020)
- ENCODE Users Meeting; Seattle, Washington (2019)

Intron retention induced by microsatellite expansions as a disease biomarker

- Computational Biology Postdoc & Grad Student Group; Seattle, Washington (2018)

Disrupted prenatal RNA processing and myogenesis in congenital myotonic dystrophy

- International Myotonic Dystrophy Consortium 11; San Francisco, California (2017)
- Molecular Genetics and Microbiology Research Seminar; Gainesville, Florida (2017)
- Advances in Skeletal Muscle Biology in Health & Disease Conference; Gainesville, Florida (2017)

TEACHING & SERVICE

- 2015-2017 Co-coordinator and primary instructor of “Computational Biology” – a course for undergraduate students that provided training in computational methods and transitioned students into full-time research positions. Faculty advisors: Dr. Eric Wang, Dr. Andy Berglund
- 2013-2017 Co-coordinator and primary instructor of “Introduction to Computational Biology” – a lecture series for graduate students. Each year, I taught four two-hour workshops introducing students to the Unix command line and Python. Faculty advisors: Dr. Arthur Edison, Dr. Jörg Bungert
- 2013-2015 Organizer and instructor of biology workshops at the Cade Museum, Gainesville, FL
- 2014 Journal club discussion leader for graduate student first-year course (GMS6001)
- 2012 Teaching assistant for Genetics (PCB3063). Instructor: Dr. Michael Miyamoto

2009-2012 Associate Director of the University of Florida Travel and Recreation Program

MENTORING

2018-present Mentored graduate students: Austin Gabel (MSTP student), Andrea Belleville (MSTP student), Phoebe Parrish

2014-2015 Mentored graduate students: Lance Denes, Aishwarya Gurumurthy, William Ruddick

2013-2017 Mentored undergraduate students: Faaq Aslaam (CNG research scholar), Zacharias Anastasiadis (CNG research scholar), Olgert Bardhi (honors thesis scholar), Catherine Llera, Nadine Hamed

ADDITIONAL TRAINING

2019-2020 Reviewer, Fred Hutch K99 mock study section

2018-2020 Attended Fred Hutch faculty led mentoring session: "Grants", "Getting and Giving Feedback", "Running a Lab", "Applying for the K99", "Collaborations"

2014 Attended the 3rd Annual Myology Training Course, Ohio State University

2013 Attended the 18th Summer Institute in Statistical Genetics, University of Washington

2010-2012 Research Technician, United States Department of Agriculture, Center for Medical, Agricultural, and Veterinary Entomology. Advisors: Nicole J. Dafoe, PhD, Eric A. Schmelz, PhD

2009-2010 Research Technician, University of Florida, Department of Biology. Advisor: Louis J. Guillette, PhD, HHMI Professor