

## William Thistlethwaite

<https://williamthistle.github.io/>

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### **RESEARCH INTERESTS**

The development and application of computational methods to better understand health and disease, the integration of heterogeneous biological data to advance biomedical discovery, precision medicine

### **EDUCATION**

#### **Princeton University**, Princeton, NJ

Ph.D. candidate in Quantitative and Computational Biology, in progress from September 2019

Advisor: Joshua M. Akey

Courses: Introduction to Genomics and Computational Molecular Biology, Method and Logic in Quantitative Biology, Foundations of Statistical Genomics, Topics in Ethics in Science

Honors: Institute Scholars Award in Quantitative and Computational Biology (2019-2020)

Grants: NIH-NHGRI QCB Graduate Program Training Grant (T32HG003284-16) (2020-current)

Activities: Graduate Student Representative for Quantitative and Computational Biology (2019-current)

#### **Brandeis University**, Waltham, MA

M.A. in Computer Science, received May 2014

Courses: Statistical Machine Learning, Data Compression, Algorithms, Computational Molecular Biology, Principles of Biological Modeling, Advanced Topics in Computer Supported Cooperation

Activities: Brandeis Initiative for Technology, Machines, Applications, and Programming (BITMAP)

Project: “Parameter Selection for Random Neural Networks in Modeling Social Transmission of Food Preference in Rats”

#### **Columbia Law School**, New York, NY

J.D., incomplete, attended from August 2010 to May 2012

Activities: *Columbia Journal of Law & the Arts*, Staff Editor  
Society for Law, Science and Technology, Executive Board

#### **The University of North Carolina at Chapel Hill**, Chapel Hill, NC

B.A., with Honors and Distinction in General Scholarship, received May 2009

Majors: English & Mathematics

Honors: UNC Chapel Hill Honors Program  
Pi Mu Epsilon (National Mathematics Honor Society)

Activities: UNC Linguistics Club

Honors Thesis: “The Quest for Joy: Solitude and Solidarity in Coleridge’s Poetry”

## **PUBLICATIONS**

The \* symbol indicates that authors contributed equally.

I have bolded my name (or the group that includes my name) in all author lists.

1. Kate E. Creevy, Joshua M. Akey, Matt Kaeberlein, Daniel E.L. Promislow, and **The Dog Aging Project Consortium**. The Dog Aging Project: An Open Science Study of Aging in Companion Dogs. *Nature*. 2022;602(7895):51-7.
2. Oscar D. Murillo\*, **William Thistlethwaite\***, Joel Rozowsky, Sai Lakshmi Subramanian, Rocco Lucero, Neethu Shah, Andrew R. Jackson, Srimeenakshi Srinivasan, Allen Chung, Clara D. Laurent, Robert R. Kitchen, Timur Galeev, Jonathan Warrell, James A. Diao, Joshua A. Welsh, Kristina Hanspers, Anders Riutta, Sebastian Burgstaller-Muehlbacher, Ravi Shah, Ashish Yeri, Lisa M. Jenkins, Mehmet E. Ahsen, Carlos Cordon-Cardo, Navneet Dogra, Stacey M. Gifford, Joshua T. Smith, Gustavo Stolovitzky, Ashutosh K. Tewari, Benjamin H. Wunsch, Kamlesh K. Yadav, Kirsty M. Danielson, Justyna Filant, Courtney Moeller, Parham Nejad, Anu Paul, Bridget Simonson, David K. Wong, Xuan Zhang, Leonora Balaj, Roopali Gandhi, Anil K. Sood, Roger P. Alexander, Liang Wang, Chunlei Wu, David Wong, David J. Galas, Kendall Van Keuren-Jensen, Tushar Patel, Jennifer C. Jones, Saumya Das, Kei-Hoi Cheung, Alexander R. Pico, Andrew I. Su, Robert L. Raffai, Louise C. Laurent, Matthew E. Roth, Mark B. Gerstein, and Aleksandar Milosavljevic. exRNA Atlas Analysis Reveals Distinct Extracellular RNA Cargo Types and Their Carriers Present across Human Biofluids. *Cell*. 2019;177(2):463-477.e15.
3. Joel Rozowsky\*, Robert R. Kitchen\*, Jonathan J. Park\*, Timur R. Galeev, James Diao, Jonathan Warrell, **William Thistlethwaite**, Sai Lakshmi Subramanian, Aleksandar Milosavljevic, and Mark Gerstein. exceRpt: A Comprehensive Analytic Platform for Extracellular RNA Profiling. *Cell Syst*. 2019;8(4):352-357.e3.
4. Saumya Das, **The Extracellular RNA Communication Consortium**, K. Mark Ansel, Markus Bitzer, Xandra O. Breakefield, Alain Charest, David J. Galas, Mark B. Gerstein, Mihir Gupta, Aleksandar Milosavljevic, Michael T. McManus, Tushar Patel, Robert L. Raffai, Joel Rozowsky, Matthew E. Roth, Julie A. Saugstad, Kendall Van Keuren-Jensen, Alissa M. Weaver, and Louise C. Laurent. The Extracellular RNA Communication Consortium: Establishing Foundational Knowledge and Technologies for Extracellular RNA Research. *Cell*. 2019;177(2):231-242.

## **EXPERIENCE**

**Molecular & Human Genetics Department at Baylor College of Medicine** Houston, TX

*Programmer / Analyst, Senior* Apr 2019 – Jul 2019

*Programmer / Analyst II* Jul 2016 – Apr 2019

*Programmer / Analyst I* Aug 2014 – Jul 2016

Worked as a programmer and analyst for Dr. Aleksandar Milosavljevic in the Bioinformatics Research Laboratory at Baylor College of Medicine. Helped lead the Data Management and Resource Repository (DMRR) for the NIH Common Fund's Extracellular RNA Communication Program. Contributed to several major projects, including the Extracellular RNA Atlas (<https://exrna-atlas.org/>), the extra-cellular RNA processing toolkit (<http://github.gersteinlab.org/exceRpt/>), and the Virtual Biorepository (<https://genboree.org/vbr-hub/>).

**Computer Science Department at Brandeis University**

Waltham, MA

*Teaching Assistant* Sep 2013 – May 2014

Worked as a teaching assistant for introductory Java programming courses. Graded homework and tests, proctored exams, and held office hours for students.

**Volen National Center for Complex Systems at Brandeis University**

Waltham, MA

*Research Assistant*

May 2013 – May 2014

Worked as a research assistant for Dr. Paul Miller in the Neural Modeling Lab at Brandeis University. Significantly revamped existing code related to synaptic plasticity in random neural networks. Completed master's project on social transmission of food preference in rats.

**Math Department at UNC Chapel Hill**

Chapel Hill, NC

*Teaching Assistant*

Aug 2006 – Dec 2007, Aug 2008 - May 2009

Graded homework assignments and quizzes for math classes (Calculus I and II). Tutored for the department's Math Help Center for one semester (Fall 2008).

**REU Math Program at University of Tennessee Knoxville**

Knoxville, TN

*Student Researcher*

May 2007 – Aug 2007

Worked with a team of student researchers (led by Dr. Morwen Thistlethwaite) on a new method for computing the canonical cell decomposition of a hyperbolic link complement.

**PROGRAMMING LANGUAGES:** Ruby (on Rails), JavaScript, Python, R, Java, C, C++, MATLAB

**CONFERENCE PROCEEDINGS**

The \* symbol indicates a presenter (multiple \* in an author list indicates a joint presentation).

I have bolded my name in all author lists.

**ORAL PRESENTATIONS**

1. **William Thistlethwaite\***, Kendall Van Keuren-Jensen\*, Karolina E. Kaczor-Urbanowicz\*, Stefan Ruhl\*, Roger Alexander\*, and David Wong\*. Salivaomics: Saliva Extracellular RNA (exRNA) & Saliva Proteome Wiki. American Association for Dental Research / Canadian Association for Dental Research Annual Meeting & Exhibition. Ft. Lauderdale, FL, USA. March 21-24, 2018.
2. Sai Lakshmi Subramanian, **William Thistlethwaite\***, Andrew R. Jackson, Neethu Shah, Sameer Paithankar, Matthew E. Roth, Bob Carter, Fred Hochberg, and Aleksandar Milosavljevic. The exRNA virtual biorepository: a biospecimen catalog service for sharing biofluid and tissue samples. NIH Extracellular RNA Communication Consortium 8<sup>th</sup> Investigators' Meeting. Rockville, MD, USA. April 6-7, 2017.

**WORKSHOPS**

1. **William Thistlethwaite\***. ERCC Data Management & Resource Repository Workshop. NIH Extracellular RNA Communication Consortium 9<sup>th</sup> Investigators' Meeting. Rockville, MD, USA. November 6-7, 2017.
2. **William Thistlethwaite\***, Jonathan Warrell\*, Roger P. Alexander\*, Alexander Pico\*, Sebastian Burgstaller\*, and Matthew E. Roth\*. DMRR Bioinformatics Workshop. NIH Extracellular RNA Communication Consortium 8<sup>th</sup> Investigators' Meeting. Rockville, MD, USA. April 6-7, 2017.
3. **William Thistlethwaite\***, Joel Rozowsky\*, Matthew E. Roth\*. DMRR Data Analysis Workshop. NIH Extracellular RNA Communication Consortium 7<sup>th</sup> Investigators' Meeting. Rockville, MD, USA. November 3-4, 2016.
4. Matthew E. Roth\*, Roger P. Alexander\*, Sai Lakshmi Subramanian\*, **William Thistlethwaite\***, Rob Kitchen, Alexander Pico\*, and Joel Rozowsky. exRNA Discovery and Functional Analysis using the

- exRNA Atlas and Network Analysis Resources on the Genboree Workbench. NIH Extracellular RNA Communication Consortium 6<sup>th</sup> Investigators' Meeting. Rockville, MD, USA. April 18-19, 2016.
5. Matthew E. Roth\*, Roger P. Alexander\*, Rob Kitchen\*, Sai Lakshmi Subramanian\*, **William Thistlethwaite\***, and Alexander Pico\*. DMRR Workshop: exRNA-Seq Data Analysis & Visualization. NIH Extracellular RNA Communication Consortium 4<sup>th</sup> Investigators' Meeting. Rockville, MD, USA. April 21-22, 2015.

## POSTERS

1. **William Thistlethwaite\*** and Joshua M. Akey. The Dog Aging Project: Examining the Influence of Genetic and Environmental Effects on Dog Aging and Age-Related Traits. 2021 NHGRI Research Training and Career Development Annual Meeting. Virtual. April 19-21, 2021.
2. Neethu Shah, **William Thistlethwaite\***, Sameer Paithankar, Jorge Arango, Yashar Kalani, Julie Saugstad, Theresa A. Lusardi, Kristina Carter, Lori Chase, Tushar Patel, Andrew R. Jackson, Sai Lakshmi Subramanian, Matthew E. Roth, Bob Carter, Fred Hochberg, and Aleksandar Milosavljevic. Virtual Biorepository (VBR): a web-based service for sharing biofluids and bio-samples. NIH Extracellular RNA Communication Consortium 10<sup>th</sup> Investigators' Meeting. Rockville, MD, USA. April 26-27, 2018.
3. **William Thistlethwaite\***, Sai Lakshmi Subramanian, Neethu Shah, Rob Kitchen, Joel Rozowsky, Timur Galeev, Alexander Pico, Anders Riutta, Roger P. Alexander, David Galas, Matthew E. Roth, Mark Gerstein, and Aleksandar Milosavljevic\*. The exRNA Atlas: Cloud-hosted repository, tools and infrastructure for processing, storage and analysis of extracellular RNA profiles. NIH Extracellular RNA Communication Consortium 7<sup>th</sup> Investigators' Meeting. Rockville, MD, USA. November 3-4, 2016.
4. **William Thistlethwaite\***, Sai Lakshmi Subramanian, Andrew R. Jackson, Neethu Shah, Aaron Baker, Sameer Paithankar, Matthew Roth, Bob Carter, Brittney Miller, Javier Figueroa, Fred Hochberg, Ryan Kim, Johnny Akers, Douglas Galasko, Matt Huentelman, Kendall Jensen, Rebecca Reiman, Jorge Arango, Yashar Kalani, Julie Saugstad, Theresa Lusardi, Joseph Quinn, and Aleksandar Milosavljevic. Infrastructure and development of the exRNA virtual biorepository. Biological Data Science Conference. Cold Spring Harbor, NY, USA. October 26-28, 2016.
5. Sai Lakshmi Subramanian\*, **William Thistlethwaite\***, Rob Kitchen, Fabio Navarro, Joel Rozowsky, Alexander Pico, Anders Riutta, Roger P. Alexander, Matthew E. Roth, Mark Gerstein, and Aleksandar Milosavljevic. Integrative analysis of exRNA profiling data using the exRNA Atlas and Genboree Workbench. Additional oral presentation by Sai Lakshmi Subramanian. NIH Extracellular RNA Communication Consortium 6<sup>th</sup> Investigators' Meeting. Rockville, MD, USA. April 18-19, 2016.
6. Aaron Baker\* and **William Thistlethwaite\***. ExRNA Data and Metadata Submission Standards: Data Management and Resource Repository (DMRR) of the exRNA Communication Consortium. NIH Extracellular RNA Communication Consortium 3<sup>rd</sup> Investigators' Meeting. Rockville, MD, USA. November 6-7, 2014.