William Thistlethwaite

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RESEARCH INTERESTS

The development and application of computational methods to better understand human 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
GPA: 3.85
Courses: Introduction to Genomics and Computational Molecular Biology, Method and Logic in
                Quantitative Biology
Honors: Institute Scholars Award in Quantitative and Computational Biology (2019-2020)
Activities: Graduate Student Representative for Quantitative and Computational Biology (2019-2020)

Brandeis University, Waltham, MA
M.A. in Computer Science, received May 2014
GPA: 3.924
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)
Master's   "Parameter Selection for Random Neural Networks in Modeling Social Transmission of Food
Project: 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
GPA: 3.683
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. 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.
2. 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.
3. 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, 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.

<u>PROGRAMMING LANGUAGES</u>: Ruby (on Rails), JavaScript, Python, Java, C, C++, MATLAB

<u>CONFERENCE PROCEEDINGS</u>

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 8th Investigators' Meeting. Rockville, MD, USA. April 6-7, 2017.

WORKSHOPS

1. **William Thistlethwaite***. ERCC Data Management & Resource Repository Workshop. NIH Extracellular RNA Communication Consortium 9th 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 8th 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 7th 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 6th 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 4th Investigators' Meeting. Rockville, MD, USA. April 21-22, 2015.

POSTERS

1. 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 10th Investigators' Meeting. Rockville, MD, USA. April 26-27, 2018.

2. **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 7th Investigators' Meeting. Rockville, MD, USA. November 3-4, 2016.

3. **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.

4. 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 6th Investigators' Meeting. Rockville, MD, USA. April 18-19, 2016.

5. 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 3rd Investigators' Meeting. Rockville, MD, USA. November 6-7, 2014.