

Tyler Grimes

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Education

Ph.D. Biostatistics

2016 – August 2020

University of Florida, Gainesville FL

Dissertation Advisor: Somnath Datta

Thesis: (tentative) “Some contributions to the differential network analysis of –omics data”

M.S. Mathematics, concentration in Statistics

2014 – 2016

University of North Florida, Jacksonville FL

Thesis Advisor: Ping Sa

Thesis: “A saddlepoint approximation to hypothesis test of variance for non-normal populations”

B.S. Mathematics, minor in Computer Science

2010 – 2014

University of Central Florida, Orlando FL

Employment

Graduate Research Assistant

2016 – present

University of Florida, Department of Biostatistics

Graduate Teaching Assistant

2014 – 2016

University of North Florida, Department of Mathematics and Statistics

Teaching Experience

Temporary Instructor – Large Sample Theory, University of Florida Spring 2019, 2020

- Gave lectures on probability, modes of convergence, U-statistics, and maximum likelihood estimation in the absence of Professor Somnath Datta.

Instructor – Business Calculus, University of North Florida

Spring 2016

- Duties included lecturing, holding weekly office hours, and creating the course syllabus, lecture notes, homework sets, quizzes, and exams.

Teaching Assistant, University of North Florida

2014 – 2016

- Assisted in elementary statistics courses. Presented information, lead discussions, and administered quizzes in weekly breakout sessions; managed computer lab sessions; held weekly office hours.

Publications

1. **Grimes, T.**, Walker, A., Datta, S., Datta, S., (2018) Predicting survival times for neuroblastoma patients using RNA-Seq expression profiles. *Biology direct*, 13(1), 11.
2. Walker, A., **Grimes, T.**, Datta, S., Datta, S., (2018) Unraveling bacterial fingerprints of city subways from microbiome 16S gene profiles. *Biology direct*, 13(1), 10.
3. **Grimes, T.**, Potter, S., Datta, S., (2019) Integrating gene regulatory pathways into differential network analysis of gene expression data. *Scientific reports*, 9(1), 5479.

Under Review:

4. **Grimes, T.**, Datta, S., SeqNet: an R package for generating gene-gene networks and simulating RNA-seq data. *Journal of statistical software*.

Conference Proceedings:

5. **Grimes, T.**, Datta, S., (2019) A random graph generation model for transcription networks and nonparametric simulator for RNA-seq expression data. *Computer Data Analysis and Modeling*. Proceedings of the XII International Conference, Minsk. September 18-22, 2019, Eds: P. Filzmoser and Y. Kharin, pp. 37-42. ISBN 978-985-566-811-5.

In Progress:

6. **Grimes, T.**, Datta, S., (tentative) Inferring dynamic networks from scRNA-seq data
7. **Grimes, T.**, Datta, S., (tentative) dnaPath: an R package for pathway-based differential network analysis of RNA-seq data
8. **Grimes, T.**, Datta, S., (tentative) Identifying cancer driver genes from differential co-expression networks.
9. **Grimes, T.**, Ping, S., A saddlepoint approximation to hypothesis tests of variance for non-normal populations.

Presentations

Talks:

1. ISMB/CAMDA International Conference, Chicago, IL 2018
“An exploratory approach for identifying novel biomarkers in high-risk cancer patients from RNA-seq data”
2. ISMB/ECCB International Conference, Prague, Czech Republic 2017
“Predicting survival times for neuroblastoma patients using RNA-Seq expression profiles”

Posters:

3. JSM, Chicago, IL. 2019
“Integrating gene regulatory pathways into differential network analysis of gene expression data”
4. UF College of PHHP Research Day, Gainesville, FL. 2019
“A pathway-based approach to differential network analysis of gene expression data”
5. IISA International Conference on Statistics, Gainesville, FL. 2018
“Predicting Survival Times for Neuroblastoma Patients Using RNA-Seq Expression Profiles”
6. UF College of PHHP Research Day, Gainesville, FL. 2018
“Predicting Survival Times for Neuroblastoma Patients Using RNA-Seq Expression Profiles”
7. UF College of Medicine Celebration of Research, Gainesville, FL. 2018
“Differential network analysis based on next-generation sequencing data”
8. UF Graduate Student Research Day, Gainesville, FL. 2018
“Predicting Survival Times for Neuroblastoma Patients Using RNA-Seq Expression Profiles”
9. UF Dept. of Statistics Winter Workshop, Gainesville, FL. 2018
“Differential network analysis based on next-generation sequencing”
10. JSM, Baltimore, MD. 2017
“Differential network analysis based on next-generation sequencing”

11. FaceBase Scientific Meeting, Boston, MA. 2017
“A differential network analysis of palatal development”

Service

Founding President - Biostatistics Student Organization 2017 – 2019
Department of Biostatistics, University of Florida

Executive Board Member - Doctoral Student Council 2017 – 2019
College of Public Health and Health Professionals, University of Florida

Student Representative - Department of Biostatistics 2019
College of PHHP Development Board Meeting, University of Florida

Student Representative - Department of Biostatistics 2017
College of PHHP Advisory Board Member Meeting, University of Florida

Projects

My [github](#) account hosts various projects including the R package [SeqNet](#) that simulates RNA-sequencing data from any underlying association network; course projects such as a [stochastic approximation algorithm for minimum graph bisection](#); conference challenges including the [CAMDA 2017 Neuroblastoma challenge](#); and other personal projects.

Professional Memberships

American Statistical Association (ASA)
International Society for Computational Biology (ISCB)

Journal Referee

BMC Bioinformatics (3)
Communications in Statistics - Simulation and Computation (2)

Honors and Awards

Student Travel Award Department of Biostatistics, University of Florida	2019
Travel fellowship Granted by CAMDA committee to present at ISMB/CAMDA 2018, Chicago, Illinois	2018
Travel fellowship Granted by CAMDA committee to present at ISMB/ECCB 2017, Prague, Czech Republic	2017
PhD Student Travel Award College of Public Health and Health Professionals, University of Florida	2017
Student Travel Award Department of Biostatistics, University of Florida	2017
Outstanding Graduate Student in Statistics University of North Florida	2016
UCF Scholars Award (scholarship and summer grant) University of Central Florida	2012 – 2013
Florida Academic Scholars Award (four-year scholarship)	2010 – 2014

Funding

U.S. Department of Veterans Affairs IPA, “Analysis of Traumatic Brain Injury and other Brain Rehabilitation Data”, September 2018 – August 2019; VA PIs: Julia Waid-Ebbs and Janis Daly

National Institutes of Health, “Exploratory Statistical Analysis of Differential Network Behaviors based on Gene Expression Atlas of Palate Development”, August 2016 - July 2019; PI: Somnath Datta