Tyler Grimes

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Education

Ph.D. Biostatistics   2016 – May, 2020
University of Florida, Gainesville FL
Thesis 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

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.

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.

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 and clinical biomarkers from a network analysis approach

9. **Grimes, T.**, Ping, S., (tentative) 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"

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)

Service

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

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   2017
College of PHHP Advisory Board Member Meeting, University of Florida

Honors and Awards

Student Travel Award   2019
Department of Biostatistics, University of Florida

Travel fellowship   2018
Granted by CAMDA committee to present at ISMB/CAMDA 2018, Chicago, Illinois

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