Gregory J. Hunt

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Positions

2019 –   Assistant Professor   Department of Mathematics, William & Mary

Education

2018	PhD	Statistics	University of Michigan
2015	MA	Statistics	University of Michigan
2013	BA	Mathematics, Computer Science	Drew University

Publications

Refereed Articles

1. **G. J. Hunt**, J. A. Gagnon-Bartsch. The Role of Scale in the Estimation of Cell-type Proportions. *To appear in Annals of Applied Statistics.*
   bioRxiv: `https://doi.org/10.1101/857805`

2. **G. J. Hunt**, C. Ground, R. L. Hunt. Fast Approximations of Spectral Lineshapes Enable Optimization of a Filtered Rayleigh Scattering Experiment. 2020 Meas. Sci. Technol. 31 095203
   `https://doi.org/10.1088/1361-6501/ab8a7e`

3. **G. J. Hunt**, M. A. Dane, J. E. Korkola, L. M. Heiser, J. A. Gagnon-Bartsch. Transformations of Microenvironment Microarray Data Improves Discovery and Integration of Latent Effects. Journal of Computational and Graphical Statistics
   `https://doi.org/10.1080/10618600.2020.1741379`

4. **G. J. Hunt**, S. Freytag, M. Bahlo, and J. A. Gagnon-Bartsch, dtangle: accurate and robust cell type deconvolution, Bioinformatics, Volume 35, Issue 12, June 2019, Pages 2093–2099
   `https://doi.org/10.1093/bioinformatics/bty926`

Manuscripts Under Review

5. **G. J. Hunt** and R. L. Hunt. Locating the Isolator Shock Train Leading Edge with Limited Pressure Information. *Under review.*

Conference Proceedings

6. R. L. Hunt. and **G. J. Hunt** Adaptive Method to Locate the Isolator Shock Train Leading Edge Given Limited Pressure Information. AIAA Propulsion and Energy 2020.

Presentations

1. Transformation and Integration of Microenvironment Microarray Data *ICSA*. May 2020. Houston, TX. *Invited.* (Re-scheduled due to COVID-19)

2. The Role of Scale in the Estimation of Cell-type Proportions. *IBC*. July 2020. Seoul, South Korea. *Contributed.* (Re-scheduled due to COVID-19)

3. Leveraging Statistical Learning to Make Fast Approximations of Spectral Lineshapes. *FPCB Machine Learning and Technology Group, NASA Langley*. April 2020. Hampton, VA. *Invited.*

4. Estimation of Cell-type Proportions in Complex Tissue. *ENAR*. March 2020. Nashville,TN. *Contributed.*

5. Estimating Cell Types in Complex Brain Tissue. *Joint Statistical Meetings*. August 2019. Denver, CO. *Contributed.*

6. Robust Transformation of MEMA data. *WNAR*. June 2019. Portland, OR. *Invited.*

7. dtangle: accurate and fast cell type deconvolution. *William & Mary Department of Mathematics*. December 2017. Williamsburg, VA. *Invited.*

8. dtangle: a simple and fast cell type deconvolution estimator. *Joint Statistical Meetings*. August 2017. Baltimore, MD. *Contributed.*

9. dtangle: a simple and fast cell type deconvolution estimator. *Michigan Student Symposium for Interdisciplinary Statistical Sciences*. March 2017. Ann Arbor, MI. *Contributed.*

At William & Mary

1. Removing Unwanted Spatial Effects from MEMA data. *Biomathematics Group*. October 2020.

2. Adapting Sparse Measurements for Control of Hypersonic Vehicles. *Applied Mathematics Seminar*. September 2020.

3. Estimation of Cell-type Proportions in Complex Tissue. *Biomathematics Group*. October 2019.

4. Support Vector Spectrum Approximations. *Applied Mathematics Seminar*. September 2019.

5. Deconvolution and Transformation. *Biomathematics Group*. November 2018.

Funding

Research Grants:

1. Virginia Space Grant Consortium. Using Machine Learning to Efficiently Model Filtered Rayleigh Scattering. 2019-2020. PI: Gregory J. Hunt. Amount: $20,000.

Educational Grants (non-research):

1. Virginia Space Grant Consortium. Summer Collaborative Bridge: Connecting Student Summer Research Experiences Across Academic and Industry. 2020. PI: Gregory J. Hunt, Rex Kincaid. Amount: $6,558.

Awards

1. Michigan Institute for Data Science 2020 Reproducibility Challenge. Category B: Exact Reproducibility winner. 2020.

2. Outstanding Graduate Student Instructor. University of Michigan, Department of Statistics. 2016.

Software

1. `app`: Adaptive Pressure Profile shock train tracking.
   https://gjhunt.github.io/app
   https://pypi.org/project/app-stle/

2. `svsa`: A python package for creating quick and accurate approximations of any spectral lineshapes model.
   https://gjhunt.github.io/svsa
   https://pypi.org/project/svsa/

3. `rrscale`: Robust re-scaling to improve recovering of latent effects.
   cran.r-project.org/package=rrscale
   https://gjhunt.github.io/rr/

4. `dtangle`: Cell type deconvolution for high-throughput gene profiling technologies.
   cran.r-project.org/package=dtangle
   https://gjhunt.github.io/dtangle

5. `dtangle.data`: annotated collection of high-throughput genomic data for deconvolution.
   https://gjhunt.github.io/dtangle/

6. Contributor to `glmm` in `statsmodels`: statistical modeling and econometrics in Python.
   github.com/statsmodels/statsmodels

Teaching

William & Mary

Fall 20	MATH 300	Mathematical Sciences Writing
Fall 20	MATH 451/551 (x2)	Probability
Spring 20	MATH 300	Mathematical Sciences Writing
Spring 20	CSCI 708	Research Project in COR
Spring 20	MATH 451/551 (x2)	Probability
Fall 19	CSCI 690	Readings in Computer Science
Fall 19	MATH 459	Data Mining
Fall 19	MATH 452/552	Mathematical Statistics
Spring 19	CSCI 688	Data Mining
Spring 19	MATH 451/451	Probability

Univerisity of Michigan (As Teaching Assistant)

Summer 17		Big Data Summer Institute
Winter 17	STATS 415	Data Mining and Statistical Learning
Fall 16	STATS 408	Statistical Principles for Problem Solving: A Systems Approach.
Winter 16	STATS 408	Statistical Principles for Problem Solving: A Systems Approach.
Fall 15	STATS 403	Introduction to Quantitative Research Methods
Winter 15	STATS 485	Capstone Seminar
Fall 14	STATS 250	Introduction to Statistics and Data Analysis
Summer 14	STATS 250	Introduction to Statistics and Data Analysis
Winter 14	STATS 250	Introduction to Statistics and Data Analysis
Fall 13	STATS 250	Introduction to Statistics and Data Analysis

Mentoring

Masters

Cassandra Chang	VSGC Project	4/2019 - 5/2020

Undergraduate

Isabel Agostino*	VSGC Project	4/2020 – 8/2020
Alison Reynolds*	Honors Thesis	1/2020 –
Grace Smith*	Research Project	1/2020 –
Alan Song	Research Project	11/2019 – 5/2020
Bin Yang	Research Project	9/2019 – 12/2019
Chris Elsner*	Research Project	1/2019 – 4/2019
Evan Wong*	EXTREEMS-QED Summer Research	3/2018 – 7/2018

* = Funded Summer Research

Thesis Committees

Maliha Ahmad	Undergraduate Honors Defense	5/2/2019
Hayden Le	Undergraduate Honors Defense	5/1/2019

Professional Activities

Memberships

- American Statistical Association
- Institute of Mathematical Statistics

Conference Sessions

- Imaging in High-throughput -omics, Co-Organizer and Chair. 2019. Western North America Region (WNAR) of The International Biometry Society.

Journal Referee

- The Open Electrical & Electronic Engineering Journal
- Bioinformatics
- Inflammatory Bowel Diseases
- GigaScience
- PLOS Computational Biology
- Journal of Healthcare Engineering
- Computational and Structural Biotechnology Journal

Committees

Collegewide Service

1. Data science steering committee

Departmental Service

1. Applied Mathematics Seminar Organizer (Fall 2020)
2. Pre-major Advisor (Fall 2020)
3. Computers (Fall/Spring 2020)
4. Data science NTE hiring committee (Spring 2019)
5. Pre-major Advisor (Fall 2019)
6. Computers (Fall/Spring 2019)