

## John A. Ramey II, Ph.D.

Postdoctoral Researcher, Fred Hutchinson Cancer Research Center  
Seattle, Washington, USA

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<http://ramhiser.com>

### Personal Statement

My research interests are in biostatistics and bioinformatics with an emphasis on statistical and machine learning, modern multivariate analysis, computational statistics, and Bayesian methods.

### Education

**Baylor University**

*Ph.D. Statistics*

– Adviser: Dean M. Young, Ph.D.

Waco, TX

*July 2012*

**Baylor University**

*M.Sc. Statistics*

Waco, TX

*Dec. 2009*

**Baylor University**

*B.Sc. Mathematics (Minor: Computer Science)*

Waco, TX

*Aug. 2008*

### Publications

**Ramey, J. A.** and Young, P. D. “A Comparison of Regularization Methods Applied to the Linear Discriminant Function with High-Dimensional Microarray Data,” *Journal of Statistical Computation and Simulation*. (in press)

McDermott, J., Wang, J., Mitchell, H., Webb-Robertson, B., Hafen, R., **Ramey, J.**, and Rodland, K. “Challenges in Biomarker Discovery: Combining Expert Insights with Statistical Analysis of Complex Omics Data,” *Expert Opinion on Medical Diagnostics*. (in press)

### Articles Submitted for Publication

**Ramey, J. A.**, Sego, L. H., and Young, D. M. “Cluster Stability Evaluation via Cluster Omission.”

Sego, L. H., Shulman, S. A., Anderson, K. K., **Ramey, J. A.**, Wilson, J. E., Pulsipher, B. A., and Sieber, W. K. “A Bayesian Acceptance Sampling Model for Combining Judgmental and Randomly Selected Samples.” (under revision)

Greer, B., Young, D., Harvill, J., and **Ramey, J.** “Pseudo-likelihood Intervals for the Ratio of Two Poisson Rates with Data Subject to Under-Reporting.”

## Articles in Preparation

**Ramey, J. A.** and Young, D. M., “Sparse Discriminant Analysis with Simultaneous Diagonalization of Covariance Matrices.”

**Ramey, J. A.**, Sego, L. H., and Young, D. M., “On the Estimation of Similarity Indices in Clustering Evaluation.”

**Ramey, J. A.**, Young, D. M., and Sego, L. H., “On Model Selection with Regularized Discriminant Analysis.”

## Awards, Grants & Honors

Outstanding Graduate Student – Department of Statistical Science, Baylor University . . . . 2011  
JSM Stat Bowl – Champion . . . . . 2010  
Outstanding First Year Graduate Student – Department of Statistical Science . . . . . 2009  
Baylor University Dean’s Scholarship . . . . . 2008-2012

## Research Experience

**Fred Hutchinson Cancer Research Center** Seattle, WA  
*Postdoctoral Researcher in Statistical Genetics under Dr. Raphael Gottardo* August 2012-present

**Pacific Northwest National Laboratory** Richland, WA  
*Research Associate, National Security Internship Program* June 2011 - July 2012

- Applied multivariate statistical learning methods to genomic and proteomic data.
- Constructed clustering evaluation and validation methods for microarray and proteomic data.
- Employed supervised, semi-supervised, unsupervised, and active learning methods along with semi-supervised clustering with large data sets to incorporate subject-matter expertise for improved performance and understanding of data.

**Statistical and Machine Learning Research Group** Waco, TX  
*Department of Statistical Science, Baylor University* 2009-2012

**Research Experience for Undergraduates at The Ohio State University** Columbus, OH  
*Vertical Integration of Research and Education in Computational Mathematics* Summer 2004

- Focused on Number Theory with an emphasis on Random Matrix Theory.

## Journal Reviewer

Journal of Statistical Computation and Simulation

## Invited Talks

**Ramey, J. A.** (February 2012). *Diagonal Discriminant Analysis with Simultaneous Diagonalization of Covariance Matrices*. Fred Hutchison Cancer Research Center, Seattle, Washington, USA.

**Ramey, J. A.** (February 2011). *Diagonal Discriminant Analysis after Simultaneous Diagonalization of Covariance Matrices with High-Dimensional Data*. Pacific Northwest National Laboratory, Richland, Washington, USA.

## Conference Papers

**Ramey, J. A.** and Young, D. M. (2010). *A More Computationally Efficient Model Selection Method for Regularized Discriminant Analysis*, Joint Statistical Meetings Proceedings, Vancouver, BC, Canada.

## Poster Presentations

**Ramey, J. A.** and Young, D. M. (August 2010). *Efficient Model Selection for Regularized Discriminant Analysis*. Joint Statistical Meetings, Vancouver, British Columbia, Canada.

**Ramey, J. A.** (April 2010). *Bayesian Regularized Logistic Regression in High-Dimensional Classification*. Instituto Panamericano de Estudios Avanzados en Probabilidad y Estadística: Semana en Métodos de Reducción de Dimensión. Centro de Investigación en Matemáticas, A.C. Guanajuato, Mexico.

## Teaching Experience

### Elementary Statistics

*Teacher of Record*

Baylor University  
Aug. 2009 - May 2011

- Taught this freshman level course in the Statistics Department.
- Developed homework, quizzes and exams for the class.
- Attended weekly meetings to enhance and improve teaching skills and techniques.

### Statistics Department Tutoring Lab

*Graduate Teaching Assistant*

Baylor University  
Aug. 2008 - May 2011

- Conducted one-on-one and group tutoring to students in undergraduate statistics courses.

### Statistics for Psychology Majors

*Graduate Teaching Assistant*

Baylor University  
Aug. 2008 - Jul. 2009

- Provided weekly supplemental instruction to a small group of undergraduate students.
- Lectured to a large number of students in an auditorium during professor absences.
- Led weekly course seminars.

## Software Projects (Available at <http://github.com/ramey>)

**activelearning:** An R Package for Querying Unlabeled Observations with Active Learning.

**clusteval:** Evaluation of Clustering Algorithms in R.

**diagdiscrim:** An R Package for Diagonal Discriminant Analysis Models.

**errorest:** An R Package for Error Rate Estimation for Statistical and Machine Learning.

**regdiscrim:** An R Package for Covariance Matrix Regularization in Discriminant Analysis.

## Professional Membership

**Member – Seattle R Users Group**

*2012-present*

**Student Member – Association for Computing Machinery**

*2011-present*

**Student Member – Institute of Electrical and Electronics Engineers**

*2011-present*

**Student Member – American Statistical Association**

*2008-present*

## Skills

**Programming and Markup Languages**

- **Skilled:** R
- **Proficient:** BUGS, L<sup>A</sup>T<sub>E</sub>X, Linux, Python, SQL
- **Experienced:** ASP, C#, C++, Java, Mathematica, MATLAB, .NET, PHP

## Miscellaneous

**United States Soccer Federation**

*Referee*

*1995 - present*

## References

**Dr. Dean Young (Ph.D. Adviser)**

*Department of Statistical Science, Baylor University*

**Dr. John Seaman**

*Department of Statistical Science, Baylor University*

**Dr. Landon Sego**

*Applied Statistics and Computational Modeling, Pacific Northwest National Laboratory*

**Dr. James Stamey**

*Department of Statistical Science, Baylor University*