

# Dongjun Chung

Department of Statistics  
University of Wisconsin-Madison  
1130 Medical Science Center  
1300 University Ave., Madison, WI 53706

Cell phone: (608) 469-2711  
E-mail: chungdon@stat.wisc.edu  
Webpage: <http://www.stat.wisc.edu/~chungdon/>

## Education

### University of Wisconsin, Madison, WI, USA

Ph.D. in Statistics (Minor in Computer Science)	2012 expected
• Advisor: Professor Sunduz Keles.	
MS in Statistics	2010

### Yonsei University, Seoul, Republic of Korea

MA in Statistics	2006
• Advisor: Professor Hyunjoong Kim.	
BA in Sociology	2004

## Research Interests

Computational biology, Next generation sequencing, Integrative analysis of high throughput data, Mixture modeling, Hidden Markov Model, EM algorithm, Multivariate data modeling, Cancer genomics, Developmental biology, Epigenetics.

## Publications in Peer-reviewed Journals

Kuan PF, **Chung D**, Pan G, Thomson JA, Stewart R, and Keles S (2011), "A statistical framework for the analysis of ChIP-Seq data," *Journal of the American Statistical Association*, Vol. 106, pp. 891-903.

**Chung D**, Kuan PF, Li B, Sanalkumar R, Liang K, Bresnick E, Dewey C, and Keles S (2011), "Discovering transcription factor binding sites in highly repetitive regions of genomes with multi-read analysis of ChIP-Seq data," *PLoS Computational Biology*, Vol. 7, e1002111.

**Chung D** and Kim H (2011), "Robust classification ensemble method for microarray data," *International Journal of Data Mining and Bioinformatics.*, Vol.5, pp. 504-518.

**Chung D** and Keles S (2010), "Sparse partial least squares classification for high dimensional data," *Statistical Applications in Genetics and Molecular Biology*, Vol. 9, Article 17.

Durtschi RB, **Chung D**, Gentry LR, Chung MK, and Vorperian HK (2009), "Developmental craniofacial anthropology: Assessment of race effects," *Clinical Anatomy*, Vol. 22, pp.800-808.

**Chung D**, Chung MK, Durtschi RB, Gentry LR, and Vorperian HK (2008), "Measurement consistency from magnetic resonance images," *Academic Radiology*, Vol. 15, pp.1322-1330.

## Book Chapter

**Chung D** and Keles S (2011), “eQTL mapping for functional classes of *Saccharomyces cerevisiae* genes with multivariate sparse partial least squares regression,” Lu H, Scholkopf B, and Zhao H (Eds.), *Handbook of Statistical Bioinformatics*, Springer.

## Manuscripts in Preparation

**Chung D**, Myers K, Grass J, Kiley T, Landick R, and Keles S, “Statistical modeling of closely spaced protein binding sites using PET ChIP-Seq data, with application to the study of  $\sigma^{70}$  factor in *Escherichia coli*”.

**Chung D**, Myers K, Ong I, Craven M, Kiley T, and Keles S, “Integrative analysis of ChIP-Seq data and strand-specific RNA-Seq data for the study of transcription units and alternative promoter usage in *Escherichia coli*”.

**Chung D** and Keles S, “Software for the unbiased analysis of ChIP-Seq data”.

## Software

**dpeak**: Nucleotide-level protein binding site identification (deconvolution) using ChIP-Seq data.

- R package (available upon request).

**mosaics**: Unbiased one- and two-sample analysis of ChIP-Seq data.

- R package (available at Bioconductor) and Galaxy wrapper (available at tool shed).

**csem**: Multi-read allocator for ChIP-Seq data.

- Galaxy wrapper (available at tool shed).

**spls**: Sparse partial least squares regression and classification.

- R package (available at CRAN).

## Conference Presentations

ICSA Applied Statistics Symposium (New York, NY) Jun. 2011

ENAR Spring Meeting (Miami, FL) Mar. 2011

The Fourth Midwest Statistics Research Colloquium (Madison, WI) Mar. 2011

- One of 3 students selected for oral presentation out of more than 30 submissions.

The Fall Conference of the Korean Statistical Society (Seoul, Korea) Nov. 2005

## Research Experiences

### University of Wisconsin, Madison, WI, USA

Research Assistant, Department of Biostatistics and Medical Informatics

- Supervisor: Professor Sunduz Keles. Sep. 2008 – Present

Research Assistant, Great Lakes Bioenergy Research Center (GLBRC) Sep. 2011 – Present

- Supervisor: Professor Timothy J. Donohue.

Research Assistant, Department of Biochemistry

Jan. 2009 – May 2010

- Supervisor: Professor Wesley Pike.

Project Assistant, Vocal Tract Development Lab, Waisman Center

Sep. 2007 – May 2008

- Supervisor: Professor Moo K. Chung and Professor Hourii Voperian.

### Yonsei University, Seoul, Republic of Korea

Research Assistant, Department of Statistics

Jul. 2005 – Dec. 2005

- Supervisor: Professor Hyunjoong Kim.

Mar. 2004 – Jun. 2004

## Research Groups

### Multi-omics Analysis and Discussion Group

Jul. 2011 - Present

- Collaborative research of the integrative analysis of various *-omics* data to study gene regulation in bacteria (focus on ChIP-Seq and RNA-Seq).
- Group members: Landick lab, Kiley lab, Donohue lab, GLBRC (biochemistry), Keles lab, Kendzioriski lab (biostatistics), Dewey lab, and Craven lab (computer science).

### ChIP-Seq Research Group

Nov. 2010 - Present

- Focus on developing methods to analyze ChIP-Seq data and studying related issues.
- Supervisor: Professor Sunduz Keles.

### Thursday Joint Research Group

Jul. 2008 - Present

- Collaborative research of machine learning and statistical genomics.
- Supervisor: Professors Grace Wahba and Sunduz Keles.

## Professional Services

Reviewer for *Journal of Multivariate Analysis*

2011 - 2012

Reviewer for *Statistical Applications in Genetics and Molecular Biology*

2011

## Professional Memberships

American Statistical Association (ASA)

Institute of Mathematical Statistics (IMS)

The International Biometric Society (IBS)

## Professional Experiences

**Yonsei Institute of Statistical Science, Seoul, Republic of Korea**

Researcher

Mar. 2006 – Jul. 2006

**Cf Information and Communications Company, Seoul, Republic of Korea**

Researcher

Jun. 2005 – Jul. 2006

**Ministry of Justice, Seoul, Republic of Korea**

Statistics Analyst

Oct. 2004 – Nov. 2004

## Teaching Experiences

**Yonsei University, Seoul, Republic of Korea**

Teaching Assistant, Department of Statistics

- Introduction to Statistics
- Experimental Design
- Multivariate Analysis

Spring 2005

Fall 2004

Spring 2004

## Computing Skills

Proficient in R, C++, Perl, Java, and Matlab.

Experienced with Python and SAS.

Proficient in working on Unix/Linux and Windows platforms.

## References

Available upon request.

(Last updated on 3/14/2012)