CURRICULUM VITAE

OLIVER YÌ-BĪNG CHÉN

CONTACT INFORMATION

615 N. Wolfe St. E3031
Baltimore, MD 21205
Email: *oliver@jhmi.edu*
Research Website: *www.oliverychen.com*
Blog: *The Data Whisper*

EDUCATION

2013- **Johns Hopkins University**, Baltimore, MD
Graduate Fellow student in Biostatistics
Advisor: Professor Martin A. Lindquist

2012 **Washington State University**, Pullman, WA
M.S. in Theoretical Statistics
Advisor: Professor Michael A. Jacroux

EXTENDED ACADEMIC EXPERIENCE

2015 Center for Brain Science, Harvard University, Boston, MA

2015 Department of Statistics, North Carolina State University, Raleigh, NC.

2015 Department of Mathematics and Statistics, Washington State University, Pullman, WA.

2015 Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC.

2012 Department of Statistics, Northwestern University, Evanston, IL.

RECENT TALKS

1. Stanford University. Department of Psychology, Serra Mall, Stanford, CA. January, 2016.
2. University of Oxford. MRC Brain Network Dynamics Unit, Oxford, United Kingdom. December, 2015.
3. University of Cambridge. Engineering Department, Cambridge, United Kingdom. December, 2015.
4. The 8th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, United Kingdom. December, 2015.
5. *Spiegelman* Student Finalist Speaker. The 142nd Annual Meeting and Exposition of the American Public Health Association, Chicago, IL. October, 2015.
6. ETH Zürich and University of Zürich. Institut für Neuroinformatik, Zürich, Switzerland, August, 2015.
7. Washington State University. Mathematics Colloquium, Department of Mathematics and Statistics, Pullman, WA. August, 2015.

PUBLICATIONS

*: Corresponding author.

1. **Chén Y.***, Ogburn E., Crainiceanu C., Caffo, B., Wager t., and Lindquist, M. (2015) High-dimensional Multivariate Mediation: with Application to Neuroimaging Data. Submitting to *Journal of the American Statistical Association*. With an invited talk at Spiegelman speaker session, APHA 2015.
2. **Chén Y.***, Xiao L., Lindquist, M., Caffo, B., Schrack J., Ferrucci L., and Crainiceanu C. (2015) A Longitudinal Functional Data Analysis for Underlying Daily Physical Activity Change. Submitting to *Biometrics*. With an invited talk at ERCIM 2015.
3. **Chén Y.***, Di J., and Xiao L. (In preparation 2015 -) Penalised Iterative Sparse Partial Correlation Estimation (II-SPaCE) - with an application to whole-brain graph estimation.
4. **Chén Y.***, Di J., Cohen J., Nebel M.B., and Lindquist M. (In preparation 2015-) A Numerical Comparison of Reliability of Different Imaging Methods in Brain Parcellation and Node Identification: with an Application to the Human Connectome Project Data.
5. **Chén Y.***. A Generalized and Drifting Time Corrected Approach Using Wiener-Granger Causality and VAR(p) Process for Detecting High-Dimensional Directed Functional Communication between Brain Regions and Predicting Behavior.
6. **Chén Y.**, and Jacroux, M*. (2014) On the Use of Semi-folding in Regular Blocks Two-level Factorial Designs. *Communications in Statistics - Theory and Methods*.
7. Gershman S.*, **Chén Y.**, Konkle T. (In preparation 2015 -) The Generative Representational Similarity Analysis.
8. Dasgupta, N*., **Chén Y.**, Basu, R., and Daoud S.S. (2013) Comparison of Clustering Algorithms: an Example with Proteomic Data. *Advances and Applications in Statistics*.
9. Dasgupta, N*., **Chén Y.**, Basu, R., and Daoud S.S. (2012) Comparison of Methods for Unsupervised Learning Methods an Applied Study using Proteomic Data from Colon Cancer and Simulations. *2012 Conference on Contemporary Issues and Applications of Statistics (CIAS 2012)*, Indian Statistical Institute.
10. **Chén Y.** (2010) An Introduction and the Application of the Computerized Intelligent Information Analysis and Filter System Model (CIIAFSM).

BOOKS AND BOOK CHAPTERS

1. Dasgupta, N.*, **Chén Y.**, Basu, R., and Daoud S.S. (2013) An Application of Unsupervised Learning Methods to Proteomic Data from Colon Cancer. *Contemporary Topics in Mathematics and Statistics with Applications*, Asian Books, Ch 9 (1): 170-184.

ACADEMIC ESSAYS, HANDBOOKS, AND STUDY GUIDES

1. **Chén Y.** A Handbook to Conquer *Casella and Berger* Book in Ten Days.
2. **Chén Y.** A Brief Study Guide for Full, Blocking, and Fractional Factorial Experimental Designs.
3. **Chén Y.** (2016) From Sir Fisher's Classical Philosophy to the Role of Statistics in Contemporary Brain Science. *Significance*. The Royal Statistical Society. Under the second round review.

R PACKAGE

1. **Chén Y.** (Author and Maintainer). *PDM (Principal Direction of Mediation)*. The package provides functions that calculate the estimates of the Principal Direction of Mediations (PDMs) and corresponding path coefficients of ultra-high dimensional data, provided treatment (e.g. thermal pain), response (e.g. reported pain), and mediation data (e.g. measurements of fMRI data).
2. **Chén Y.** (Co-author). *Refund*. Contribute functions that (1) calculate the estimates for parameters of bivariate functions; and (2) conduct covariance estimation and smoothing.

GRANTS WRITING

1. Multi-dimensional Geometric Decompositions in Functional and Structural Neuroimaging. NIH-R01 Grant. P.I. Brain Caffo. 2015

GRANTS INVOLVED

Bill & Melinda Gates Foundation

1. A Longitudinal Functional Data Analysis for Underlying Daily Physical Activity Change. PI: Xiao Luo. 2015

National Institutes of Health (NIH) - R01 Grants

1. Statistical Methods for Biosignals with Varying Domains. R01HL123407. PI: Ciprian Crainiceanu. 2015
2. Statistical Methods for Large n and p Problems. R01EB012547. PI: Brain Caffo. 2014 - 2015
3. Longitudinal Causal Inference for fMRI. National Institute of Biomedical Imaging and Bioengineering. R01EB016061. PI: Martin Lindquist. 2014 - 2015

Kennedy Krieger Institute (KKI)

1. Resources for Quantitative Functional MRI. P.I. Peter C. M. van Zijl; Co-PI: Brain Caffo. 2015

RESEARCH WORKING GROUPS

2014- Human Connectome Project (HCP) Working Group. The Johns Hopkins University

2013- Statistical Methods and Applications for Research in Technology (SMART) Working Group. The Johns Hopkins University

EMPLOYMENT

- Intern. AXIO Research Corporation, Seattle, WA, USA, 2012
- Statistician. Wyrick Lab, School of Molecular Biosciences, WSU, Pullman, WA, USA, 2011-2012
- Senator. Department of Statistics, Graduate and Professional Student Association, WSU, Pullman, WA, USA, 2010-2012
- Exclusive Agent for Burma, Greater China, Indonesia, Mongolia, Singapore, and Thailand. KLR Industrial Group, Hyderabad, India, 2008-2010
- Global Marketing Manager. Sunway Chemicals, Shanghai, 2006-2010

CONSULTING AND COLLABORATIVE RESEARCH

1. Mayo Clinic and the Johns Hopkins University School of Medicine. Relationship between Depression and Diabetes. With Zohaib Akhtar, MD.
2. The Johns Hopkins University School of Medicine. With Vahid Eslami, Postdoctoral Fellow in Neuroscience.
3. Tropical (Malaria) and Non-communicable Diseases. Ifakara Health Institute (IHI), Tanzania. Tarimo, B. and **Chén Y.** 2015.
4. American College of Surgeons. National Surgical Quality Improvement Program. **Chén Y.**, and Erin Mariel Rada, MD. 2014.
5. Role of the Histone H2B Repression (HBR) Domain in Gene Expression and Chromatin Structure. Wyrick, J., and **Chén Y.** 2011-12.
6. The Study of the Role of Chromatin Structure in Regulating Expression and DNA Repair in Yeast. Morris, R., and **Chén Y.** 2011-12.
7. Modeling Washington Apple Bloom Phenology and Fruit Growth. Schmidt, T. (P.I.), Dasgupta, N. (co-P.I.), and **Chén Y.** 2011-12.
8. Analysis of RNA-Binding Proteins in Developing Rice Seeds. Morris, R., **Chén Y.**, and Wyrick, J. 2011-12.
9. Histone Domains and Modifications that Regulate DNA Repair. Kyriss, M., **Chén Y.**, and Wyrick, J. 2011-12.

TEACHING EXPERIENCE

- Graduate Teaching Assistant, Statistical Methods in Public Health I, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2015.
- Graduate Teaching Assistant, Statistical Methods in Public Health IV, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2015.
- Graduate Teaching Assistant, Principles and Methods of Functional Neuroimaging II, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2015.
- Graduate Teaching Assistant, Principles and Methods of Functional Neuroimaging I, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2014-2015.
- Graduate Teaching Assistant, Statistical Reasoning in Public Health I, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2013-2014.
- Instructor, Statistical Thinking, Department of Statistics, Washington State University (WSU), 2011-2012.
- Graduate Teaching Assistant, Introduction to Statistical Methods, Department of Statistics, WSU, 2010-2012.

PRESENTATIONS

1. Organization for Human Brain Mapping Annual Meeting, Geneva, Switzerland, June, 2016.
2. Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC, August, 2015.
3. The Joint Statistical Meetings (JSM), Seattle, WA. August, 2015.
4. International Biometric Society Eastern North America Region (ENAR), Miami, FL. March, 2015.
5. Delta Omega Society, Baltimore, MD. Feburary, 2015.

SKILLS

- Statistical Packages: R, SAS, Matlab, SPM, Mathematica, Stata, Minitab, RSplida, and StatCrunch
- Coding: Visual Basic, SQL, HTML, Bash, WinBUGS (some experience), C (some experience)
- Actuary: P1 Test, Score: 9/10

AWARDS

1. First Place. Student Research Competition, the Applied Public Health Statistics Section, the American Public Health Association, 2015
2. Joseph Zeger Award, 2015
3. Statistical and Applied Mathematical Sciences Institute Fund, 2015
4. Louis I. and Thomas D. Dublin Award for the Advancement of Epidemiology and Biostatistics, (presented with the Dean), 2015
5. Award of Excellence for Outstanding Performance and Lasting Contributions as a Teaching Assistant, 2012
6. ECUST Comprehensive Academic Performance Award, 2010

OTHER VISITS

- Program on Challenges in Computational Neuroscience (CCNS) Workshop. The Hamner Conference Center, 15 TW Alexander Dr. RTP, NC. August, 2015.
- Computational Neuroscience Summer School. The Solution Center, 1101 Slater Road, Durham, NC. July 27-31, 2015.

PROFESSIONAL MEMBERSHIPS

- Bernoulli Society for Mathematical Statistics and Probability
- International Society for Business and Industrial Statistics
- American Statistical Association
- American Public Health Association

HOBBIES

I have been painting *Gōng-bǐ* style *watercolor* (aquarelle) for twenty years; I also enjoy *oil painting*; I played *trombone*, *trumpet*, and *Chinese Sornā*; and I like classical music: my favorite composer is Debussy, my favorite pianist is Horowitz, and my favorite piece is *Nr. 7, Träumerei* in Schumann's *Kinderszenen, Op.15*, performed by Horowitz at the Moscow Conservatory in 1986.