

CURRICULUM VITAE

JEFF GOLDSMITH

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Education

PH.D. BIostatistics, Johns Hopkins School of Public Health, *expected* 2012.

ADVISORS: Ciprian Crainiceanu and Brian Caffo

DISSERTATION: Statistical Methods for Cross-sectional and Longitudinal Functional Observations

B.S. MATHEMATICS, Dickinson College, 2007

Summa Cum Laude, Honors in Mathematics

Professional Experience

JOHNS HOPKINS UNIVERSITY

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| 2009-2010 | Research Assistant – National Institute of Neurological Disorders and Stroke (R01NS060910) |
| 2008-2009 | Research Assistant – National Institute of Allergy and Infectious Diseases Integrated Preclinical/Clinical Program (U19 AI060614 and U19 AI082637) |

EXTENDED VISITS TO OTHER DEPARTMENTS

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| June 2011 | Department of Statistics, Ludwig-Maximilians-University, Munich |
| June 2010 | School of Mathematics and Applied Statistics, University of Wollongong |

EXTERNAL CONSULTING

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| Feb - May 2011 | Saphire Biostatistics |
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Professional Memberships

AMERICAN STATISTICAL ASSOCIATION
INTERNATIONAL BIOMETRIC SOCIETY

Honors and Awards

2012	ASA Biometrics Section Travel Award
2011	ENAR Distinguished Student Paper Award
2011	Margaret Merrell Award for Outstanding Research by a Biostatistics Doctoral Student
2011	Invited Paper in “Highlights of JCGS” Session at Interface 2011
2011	School-wide Teaching Assistant Recognition Award
2011	Helen Abbey Award for Excellence in Teaching
2010	Jane and Steve Dykacz Award for Outstanding Paper in Medical Statistics
2009	Nominated for School-wide Teaching Assistant Recognition Award
2008-2010	Biostatistics Department Annual Chili Cook-off Champion
2007-2012	Sommer Scholar
2007	James Fowler Rusling Prize
2007	Lance E. Kohlhaas Memorial Prize in Mathematics
2007	Phi Beta Kappa National Honor Society
2005	Pi Mu Epsilon Mathematics Honor Society
2004 & 2005	Caroline Hatton Clark Mathematics Scholarship
2003-2007	John Dickinson Scholar
2002	National Merit Scholar

Publications

PUBLISHED

J. Goldsmith, C. M. Crainiceanu, B. S. Caffo, D. S. Reich. Longitudinal Penalized Functional Regression for Cognitive Outcomes on Neuronal Tract Measurements (2012). *Journal of the Royal Statistical Society: Series C*, **61** 1–17.

J. Bai, **J. Goldsmith**, B. S. Caffo, T. Glass, C. M. Crainiceanu (Accepted). Movelets: A Dictionary of Movement. *Electronic Journal of Statistics*.

J. Goldsmith, B. S. Caffo, C. M. Crainiceanu, Y. Du, D. S. Reich, C. W. Hendrix (2011). Non-linear Tube Fitting for the Analysis of Anatomical and Functional Structures. *Annals of Applied Statistics*, **5** 337–363.

J. Goldsmith, J. Bobb, C. M. Crainiceanu, B. S. Caffo, D. S. Reich (2011). Penalized Functional Regression. *Journal of Computational and Graphical Statistics*, **20** 830–851.

J. Goldsmith, C. M. Crainiceanu, B. S. Caffo, D. S. Reich (2011). Penalized Functional Regression Analysis of White-Matter Tract Profiles in Multiple Sclerosis. *NeuroImage*, **57** 431–439.

J. Goldsmith, M. P. Wand, C. M. Crainiceanu (2011). Functional Regression via Variational Bayes. *Electronic Journal of Statistics*, **5** 572–602.

T. Shinohara, **J. Goldsmith**, F. Mateen, D. S. Reich, C. M. Crainiceanu (Accepted). Predicting Breakdown of the Blood-Brain Barrier in Multiple Sclerosis without Contrast Agents. *American Journal of Neuroradiology*.

N. Louissaint, S. Nimmagadda, E. Fuchs, R. Bakshi, Y. Cao, L. Lee, **J. Goldsmith**, B. S. Caffo, Y. Du, K. King, F. Menendez, M. Torbenson, R. Wahl, C. W. Hendrix (Accepted). Distribution of Cell-free and Cell-associated HIV Surrogates in the Colon following Simulated Receptive Anal Intercourse. *Journal of Acquired Immune Deficiency Syndromes*.

N. Louissaint, S. Nimmagadda, R. Bakshi, Y. Du, K. Macura, K. King, R. Wahl, **J. Goldsmith**, B. S. Caffo, Y.-J. Cao, J. Anderson, E. Fuchs, C. W. Hendrix. Distribution of Cell-free and Cell-associated HIV Surrogates in the Female Genital Tract following Simulated Vaginal Intercourse (Accepted). *Journal of Infectious Diseases*.

C. M. Crainiceanu, **J. Goldsmith** (2010). Bayesian Functional Data Analysis Using WinBUGS. *Journal of Statistical Software*, **32** 1-33.

J. Goldsmith, L. Koss (2009). Dynamical properties of the derivative of the Weierstrass elliptic function. *Involve*, **2** 267-288.

UNDER REVIEW

J. Goldsmith, L. Huang and C. M. Crainiceanu. Smooth Scalar-on-Image Regression. [Submitted].

J. Goldsmith, S. Greven, C. M. Crainiceanu. Corrected Confidence Bands for Functional Data Using Principal Components. [Submitted | *A version of this paper won an ENAR Distinguished Student Paper Award*].

J. Gertheiss, **J. Goldsmith**, S. Greven, C. M. Crainiceanu. Longitudinal Scalar-on-Functions Regression with Application to Tractography Data. [Submitted].

IN PROGRESS

J. Goldsmith, J. Bai, B. S. Caffo, T. Glass, C. M. Crainiceanu. Movelets: Accelerometer Use in Large Observational Studies.

B. Swihart, **J. Goldsmith**, C. M. Crainiceanu. Testing for Functional Effects.

Presentations

- 2012 “Longitudinal Penalized Functional Regression.” Annual Conference of the German and Austrian Statistical Associations, Vienna, Austria, *invited*. (Upcoming).
- 2012 “A Modular Approach to Functional Regression”. Annual Conference of the International Society for Clinical Biostatistics, Bergen, Norway, *invited*. (Upcoming).
- 2012 “Fast Joint Functional Regression Modeling via Variational Bayes”. JSM 2012, San Diego, *invited*. (Upcoming).
- 2011 “Longitudinal Penalized Functional Regression”. JSM 2011, Miami, *contributed*.
- 2011 “Cross-Sectional and Longitudinal Penalized Functional Regression”. Ludwig-Maximilians-University, *invited*.
- 2011 “Cross-Sectional and Longitudinal Penalized Functional Regression”. Interface 2011, *invited by Editor of JCGS*.
- 2011 “Longitudinal Penalized Functional Regression”. ENAR 2011, Miami, *invited*.
- 2011 “Non-linear Tube-fitting and Penalized Functional Regression in Diffusion Tensor Imaging”. National Institutes of Health, Translational Neuroradiology Unit, *invited*.
- 2010 “Penalized Functional Regression”. Joint Statistical Meetings 2010, Vancouver, *topic contributed*.
- 2010 “Penalized Functional Regression”. University of Wollongong, Australia, *invited*.
- 2010 “Medical Imaging and Biostatistics”. Dickinson College, Department of Mathematics and Computer Science, *invited*.

Peer Review Activities

- Reviewer *Annals of Applied Statistics*
- Reviewer *Biometrics*
- Reviewer *Journal of the Royal Statistical Society: Series B*
- Reviewer *Australian & New Zealand Journal of Statistics*

Teaching Experience

CO-INSTRUCTOR

2011 Biostatistics for Public Health Majors (Undergraduate Course)

LEAD TA

2010-2011 Statistical Methods in Public Health II & III

2009 Statistical Methods in Public Health I & II

GUEST LECTURES

Feb. 2011 Statistical Methods in Public Health III

Oct. 2010 Statistical Methods in Public Health II

TEACHING ASSISTANT

2010 Advanced Methods in Biostatistics

2009 Statistical Reasoning in Public Health, Summer Institute

2008-2009 Methods in Biostatistics I-IV

2008 Mathematics for Biostatistics

2007 Real Analysis II

2006 Real Analysis I

2006 Calculus III

2005 Calculus II

2004 Calculus I

Software

COMPONENTS OF `REFUND` PACKAGE AVAILABLE ON `CRAN`

`pfr()` implements cross-sectional penalized functional regression methods.

`lpfr()` implements longitudinal penalized functional regression methods.

Importantly, these functions allow multiple functional predictors, missingness in the functional predictors, and return coefficient functions with confidence bounds.

CODE AVAILABLE ONLINE

Web Appendix to “Penalized Functional Regression”, containing R code used in simulations.

Supplementary Materials for “Longitudinal Penalized Functional Regression”, containing simulated examples using both R and WinBUGS.

Supplementary Materials for “Functional Regression via Variational Bayes”, comparing results of Variational Bayes and MCMC for both cross-sectional and longitudinal functional regression; code in R and WinBUGS.

Service and Leadership

2009-2010	Johns Hopkins University Alumni Student Ambassador from the School of Public Health
2009-2010	Student Representative, Department of Biostatistics Retreat Planning Committee
2008-2011	Student Representative, Department of Biostatistics student recruitment committee
2008-2010	Biostatistics Department Representative, Johns Hopkins Bloomberg School of Public Health Student Assembly

Computing Proficiency

STATISTICAL SOFTWARE	R, WinBUGS
DOCUMENT PREPARATION	L ^A T _E X, MS Office
ENVIRONMENTS	UNIX, Sun Grid Engine