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Division of Biostatistics  
University of Minnesota  
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## Education

- 1997-2004 Ph.D. in Biostatistics, University of Washington, Seattle, Washington, "Image Analysis and Signal Extraction from cDNA Microarrays"
- 1993-1997 B.S. Statistics/B.A. Mathematics, Winona State University, Winona, Minnesota Graduated Summa cum Laude

## Employment

- 2005-present Assistant Professor in the Division of Biostatistics within the School of Public Health at the University of Minnesota
- 2004-2005 Research Associate at the University of Minnesota Cancer Center
- 2003-2004 Statistical Consultant for Insightful Corporation, development of the S+Gene library with Doug Clarkson, providing comprehensive software for statistical genetics research

## Research Interests

- Development of models to test for association/linkage in case-parent triad studies
- Improvements in diagnosis and prognosis for cancer based on genetic markers such as SNPs, mRNA expression, or protein expression
- Image analysis to extract informative signals and measure signal quality from cDNA microarray studies

## Peer-reviewed Publications

- **Bergemann, T.L** and Huang, Z. A New Method to Account for Missing Data in Case-Parent Triad Studies. *Human Heredity*, **68**(4): 268-277, 2009.
- Starr, T.K., Allaei, R., Silverstein, K.A., Staggs, R.A., Sarver, A.L., **Bergemann, T.L**, Gupta, M., O'Sullivan, M.G., Matise, I., Dupuy, A.J., Collier, L.S., Powers, S., Oberg, A.L., Asmann, Y.W., Thibodeau, S.N., Tessarollo, L., Copeland, N.G., Jenkins, N.A., Cormier, R.T. and Largaespada, D.A. A Transposon-based Genetic Screen in Mice Identifies Genes Altered in Colorectal Cancer. *Science*, **323**(5922): 1747-1750, 2009.
- Cooley, S., Trachtenberg, E., **Bergemann, T.L**, Saetern, K., Klein, J., Le, C.T., Marsh, S.G., Guethlein, L.A., Parham, P., Miller, J.S., and Weisdorf, D.J. Donors with Group B KIR Haplotypes Improve Relapse-free Survival after Unrelated Hematopoietic Cell Transplantation for Acute Myelogenous Leukemia. *Blood*, **113**(3): 726-732, 2009.
- Fermin, D.R., Barac, A., Lee, S., Polster, S.P., Hannenhalli, S., **Bergemann, T.L.**, Grindle, S., Dyke, D.B., Pagani, F., Miller, L.W., Tan, S., Remedios, C., Cappola, T.P., Margulies, K.B. and Hall, J.L. Sex and Age Dimorphism of Myocardial Gene Expression in Nonischemic Human Heart Failure. *Circulation: Cardiovascular Genetics*, **1**: 117-125, 2008.

- **Bergemann, T.L.**, and Zhao, L.P. Signal Quality Measurements for cDNA Microarray Data. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, Epub ahead of print, 2008 July 23.
- Koelle, D.M., and **Bergemann, T.L.** Doctor, why is my herpes so bad? The search continues. *Journal of Infectious Diseases*, **197**(3): 331-334, 2008.
- Yang, Q., Biernacka, J.M., Chen, M.H., Houwing-Duistermaat, J.J., **Bergemann, T.L.**, Basu, S., Fan, R., Liu, L., Bourgey, M., Clerget-Darpoux, F., Lin, W.Y., Elston, R.C., Cupples, L.A. Summary of GAW15 Group 4: Using Linkage and Association to Identify and Model Genetic Effects. *Genetic Epidemiology*, **31**(Suppl 1): S34-42, 2007.
- Cooley, S., Xiao, F., Pitt, M., Gleason, M., McCullar, V., **Bergemann, T.L.**, McQueen, K.L., Guethlein, L.A., Parham, P., and Miller, J.S. A subpopulation of human peripheral blood NK cells that lacks inhibitory receptors for self-MHC is developmentally immature. *Blood*, **110**(2): 578-586, 2007.
- Geurts, A.M., Hackett, C.S., Bell, J.B., **Bergemann, T.L.**, Collier, L.S., Carlson, C.M., Largaespada, D.A., and Hackett, P.B. Structure-based Prediction of Insertion-site Preferences of Transposons into Chromosomes. *Nucleic Acids Research*, **34**(9): 2803-2811, 2006.
- Petryk, A., **Bergemann, T.L.**, Polga, K.M., Ulrich, K.J., Raatz, S.K., Brown, D.M., Robison, L.L., and Baker, K.S. Prospective Study of Changes in Bone Mineral Density and Turnover in Children after Hematopoietic Cell Transplantation. *Journal of Clinical Endocrinology and Metabolism*, **91**(3): 899-905, 2006.
- Cooley, S., McCullar, V., Wangen, R., **Bergemann, T.L.**, Spellman, S., Weisdorf, D.J., and Miller, J.S. KIR reconstitution is Altered by T cells in the Graft and Correlates with Clinical Outcomes after Unrelated Donor Transplantation. *Blood*, **106**(13): 4370-4376, 2005.
- **Bergemann, T.L.**, and Clarkson, D.B. Linear Parameter Haplotype Models with Stratification. *Human Heredity*, **59**(4): 201-209, 2005.
- **Bergemann, T.L.**, Laws, R.J., Quiaoit, F., and Zhao, L.P. A Statistically Driven Approach for Image Segmentation and Signal Extraction in cDNA Microarrays. *The Journal of Computational Biology*, **11**(4): 695-713, 2004.
- Laws, R.J., **Bergemann, T.L.**, Quiaoit, F., and Zhao, L.P. SignalViewer: Analyzing Microarray Images. *Bioinformatics*, **19**(13): 1716-1717, 2003.
- Shamberger, R.C., Ritchey, M.L., Haase, G.M., **Bergemann, T.L.**, Loechelt-Yoshioka, T., Breslow, N.E., and Green, D.M. Intravascular Extension of Wilms Tumor. *Annals of Surgery*, **234**(1): 116-121, 2001.
- Ritchey, M.L., Shamberger, R.C., Haase, G.M., Horwitz, J., **Bergemann, T.L.**, and Breslow N.E. Surgical Complications after Nephrectomy for Wilms Tumor: Report from the National Wilms Tumor Study Group. *J Am Coll Surg*, **192**(1): 63-8, 2001.
- Dome, J.S., Chung, S., **Bergemann, T.**, Umbricht, C.B., Saji, M., Carey, L.A., Grundy, P.E., Perlman, E.J., Breslow, N.E., and Sukumar, S. High Telomerase Reverse Transcriptase (hTERT) Messenger RNA Level Correlates with Tumor Recurrence in Patients with Favorable Histology Wilms' Tumor. *Cancer Research*, **59**: 4301-4307, 1999.

## Papers in Peer-reviewed Proceedings

- **Bergemann, T.L.**, Quiaoit, F., Delrow, J., and Zhao, L.P. Statistical Issues in Signal Extraction from Microarrays. *SPIE Proceedings: Microarrays: Optical Technologies and Informatics* **4266**:24-34, 2001.

## Papers Submitted

- **Bergemann, T.L.**, Bangirana, P., Boivin, M.J., and John, C.C. Statistical Methods to Assess Cognitive Outcomes in Children Over Time. *Under revision*, 2009.
- **Bergemann, T.L.** Use of Signal Quality Measurements to Gain Efficiency in Analysis of cDNA Microarray Data. *Journal of Genetics and Genomics*, submitted 2009.
- Sam-Agudu, N.A., Greene, J.A., Opoka, R.O., Kazura, J.W., Boivin, M.J., Zimmerman, P.A., Riedesel, M.A., **Bergemann, T.L.**, Schimmenti, L.A., and John, C.C. TLR9 Polymorphisms are Associated With Altered IFN- $\gamma$  Levels in Children With Cerebral Malaria. *American Journal of Tropical Medicine and Hygiene* submitted, 2009.
- Basu, S., **Bergemann, T.L.**, Dvorkin, D., and Seth, M., Liu, L., Liu, Y.C., Jung, J., Zhong, M., and Fan, R. Combined Linkage and Association Mapping of Quantitative Traits for Rheumatoid Arthritis. Genetic Analysis Workshop 15 paper, 2006.

## Invited Presentations

- Bergemann, T.L. The Analysis of Case-Parent Triad Studies: Imputing Missing Data. University of Alabama at Birmingham Department of Biostatistics, Section on Statistical Genetics, 2008.
- Bergemann, T.L. and Spector, L.G. Case-parent Triad Analyses of Genes Related to Bone Growth in Osteosarcoma, University of Minnesota Division of Biostatistics, 2008.
- Bergemann, T.L. and Clarkson, D.B. Joint Estimation of Haplotype Frequencies and Association in Generalized Linear Models. National Cancer Institute, Division of Cancer Epidemiology and Genetics, Biostatistics Branch, 2006.
- Bergemann, T.L. and Zhao, L.P. Signal Quality Measurements for cDNA Microarray Data. University of Minnesota Department of Statistics, 2005.
- Bergemann, T.L. and Clarkson, D.B. Joint Estimation of Haplotype Frequencies and Association in Generalized Linear Models, University of Minnesota Division of Biostatistics, 2005.

## Conference Presentations

- Bergemann, T.L. Imputing Missing Data in Case-Parent Triad Studies. ENAR, 2009.
- Bergemann, T.L. Imputing Missing Data in Case-Parent Triad Studies. JSM, 2008.
- Bergemann, T.L. Model Selection in Case-Parent Triad Studies. BGA, 2007.
- Bergemann, T.L. Estimation of Gene by Exposure Interactions in Case-Parent Triad Studies. JSM, 2006.
- Bergemann, T.L. Estimation of Gene by Exposure Interactions in Case-Parent Triad Studies. IMS 9th Meeting of New Researchers in Statistics and Probability, 2006.
- Bergemann, T.L. and Zhao, L.P. Signal Quality Measurements for cDNA Microarray Data. IBC, 2006.
- Bergemann, T.L. and Zhao, L.P. Signal Quality Measurements for cDNA Microarray Data. ENAR, 2006.

## Teaching

- Spring semester 2006-8 *PubH 7402: Biostatistics Modeling & Methods* at the University of Minnesota
- Spring semester 2007-9 *PubH 7406: ANOVA and Design* at the University of Minnesota
- Summer 2000 *Introduction to Dependent Outcome Data* at the University of Washington, TA for Art Peterson, PhD
- 1995-1997 *Calculus I-IV* at Winona State University, TA for Jeff Anderson, PhD
- Fall 1996 & Summer 1995 *Differential Equations* at Winona State University, TA for Jeff Anderson, PhD

## Professional Membership

- American Statistical Association
- International Genetic Epidemiology Society
- Children's Oncology Group

## Journal Reviews

- Computational Statistics and Data Analysis
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- Journal of Agricultural, Biological, and Environmental Statistics
- Journal of the Royal Statistical Society–C
- Journal of Statistical Planning and Inference
- Statistics in Medicine
- Bioinformatics
- BMC Bioinformatics
- IEEE/ACM Transactions on Computational Biology and Bioinformatics
- Nucleic Acids Research
- Journal of Clinical Oncology
- Diseases of the Colon and Rectum

## Other Professional Activities

- 2008-2009 Chair of the organizing committee for the 12<sup>th</sup> IMS New Researchers' Conference
- 2007-2010 Organizing committee for the IMS New Researchers' Conference
- 2000-2004 Participation in GEMTAG (Genetic Epi/Microarray Technology Affinity Working Group)
- Fall 2000 Participation in the Functional Genomics workshop at the Institute for Pure and Applied Mathematics at UCLA

- 1999-2002 Statistical Consulting for students in the University of Washington Schools of Medicine and Dentistry
- 1998-2001 Research Assistantship with Norm Breslow, providing statistical analysis for the National Wilms Tumor Study.

## **Honors/Awards**

- Delta Omega, inducted 2009
- Graduate School Merit Award, University of Washington, 1997
- Gertude Cox Scholarships Honorable Mention, 1997