

Matthew J. Strand

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Education

- 1989 B.S. Mathematics and Statistics, Colorado State University (CSU), Fort Collins, Colorado
- 1991 M.S. Statistics, CSU, Fort Collins, Colorado
- 1998 Ph.D. Statistics, Kansas State University (KSU), Manhattan, Kansas

Professional Positions

- 1990 - 1991 Research Assistantship, Department of Statistics, CSU
- 1990 - 1991 Instructor, Department of Statistics, CSU
- 1991 - 1993 U. S. Peace Corps Volunteer, Secondary School Teacher, Lesotho, Africa
- 1994 - 1997 Statistician, National Biological Service, Division of the United States Geological Service, U. S. Department of Interior, Fort Collins, Colorado
- 1995 Instructor, Department of Statistics, CSU
- 1995 - 1998 Instructor, Department of Statistics, KSU
- 1998 - 2002 Consultant, The Human Factor, Inc., Fort Collins, Colorado
- 1999 Consultant, Arapahoe Technologies, Littleton, Colorado
- 1999 Consultant, California Animal Hospital, Los Angeles, California
- 1999 - 2001 Adjunct Assistant Professor, Department of Statistics, University of California at Los Angeles (UCLA), Los Angeles, California
- 2001 - 2008 Assistant Professor, Division of Biostatistics, National Jewish Health (NJH), Denver, Colorado
- 2002 - 2008 Assistant Professor, Department of Preventive Medicine and Biostatistics, University of Colorado Denver (UCD), Denver, Colorado
- 2008 - Date Associate Professor, Division of Biostatistics and Bioinformatics, NJH
- 2008 - 2009 Assistant Professor, Department of Biostatistics and Informatics, Colorado School of Public Health, UCD
- 2009 - Date Associate Professor, Department of Biostatistics and Informatics, Colorado School of Public Health, UCD

Professional Affiliations

- 1995 - Date American Statistical Association
- 2002 - Date Western North American Region International Biometric Society
- 2007 - Date Colorado/Wyoming Chapter, American Statistical Association

Professional Service and Committees

National Jewish Health

- 2003 - 2007 Member, Institutional Review Board
2007 - Date Auxiliary member, Institutional Review Board

University of Colorado Denver

- 2002 - 2003 Biometrics Program Support Committee (evaluate funding for teaching)
2002 - 2008 Substitute reviewer for GCRC SAC
2005 - 2007 Biostatistics Admissions Committee: committee member to review applications for students applying to the Biostatistics program at UCD, chaired by Gary Grunwald.
2008 - 2009 Reviewer of applicants for an Assistant Professor position with the Department of Mathematical and Statistical Sciences, UCD (downtown campus).

National Service

- 2006 Panel member: EPA Workshop on Interpretation of Epidemiologic Studies of Multi-pollutant Exposure and Health Effects, Chapel Hill, NC.
2007 - 2011 Treasurer and Chapter Officer, Colorado/Wyoming Chapter of the American Statistical Association.
2011 - Date President, Colorado/Wyoming Chapter of the American Statistical Association (starting in July, 2011).

International Service

- 1991 - 1993 U.S. Peace Corps Volunteer, Lesotho, Africa. Secondary school teacher; treasurer and selection committee member for the Tuition Assistance Program (TAP) that provides scholarships for primary and secondary school students in Lesotho.
2006 Application review, research associate position, Catholic University of Leuven, Belgium.

Review and Referee Activities

- 2000 - 2001 SticiGui: Statistics Tools for Internet and Classroom Instruction with a Graphical User Interface
2001 Journal of Agricultural, Biological and Environmental Sciences
2002 - 2003 Journal of Allergy and Clinical Immunology
2004 Journal of Clinical Epidemiology
2004 The American Statistician journal
2005 NIH, International Collaborations in Infectious Disease Research (ICIDR)
2005 - 2006 Journal of Statistical Planning and Inference
2006 - 2009 American Journal of Respiratory and Critical Care Medicine

2006	Journal of Exposure Science and Environmental Epidemiology
2006	Journal of the American Medical Association
2006	Journal of Environmental Management
2007	Reviewer for Australian and New Zealand Journal of Statistics
2010	Advances in Physiology Education
2010	Reviewer of proposal for 2 nd edition of Longitudinal Data Analysis, Hedeker and Gibbons.
2011	Reviewer for Chest

Teaching Activities

Course Director

1990 - 1991	General Statistics (ST201), CSU
1992 - 1993	Math, Science and Geography, U. S. Peace Corps, Lesotho, Africa
1995	Introduction to Statistics (ST301), CSU
1995 - 1998	Statistics for the Social Sciences (STAT330), KSU
1997	Biometrics (STAT340), KSU
1998	Business Statistics (STAT350), KSU
1999 - 2000	Introduction to Statistical Reasoning (Stat 10), UCLA
2000 - 2001	Introduction to Statistical Methods for Business and Economics (Stat M11/Econ 40), UCLA
2000 - 2001	Applied Statistics (Stat 110A, B), UCLA
2002 - 2005	Statistical Theory I (BIOS6631), UCD
2002 - Date	Teaching statistics and statistical package workshops, NJH
2006 - 2007	Introduction to Applied Statistics (BIOS6611), UCD
2008 - Date	Longitudinal Data Analysis (BIOS6643; prev. BIOS7711), UCD

Graduate Student Thesis Advisor

2005 - 2006	Biostatistician, Liselotte Brydesholt Halkjær, Ph.D. dissertation, Gentofte University Hospital, Denmark
2005 - 2006	Advisor, Tony Moscoso, Master's thesis, UCD
2006 - 2007	Committee member, Patrick Blatchford, Ph.D. dissertation, UCD
2006 - 2007	Committee member, Dexiang Gao, Ph.D. dissertation, UCD
2006 - 2007	Committee member, Stephanie Bruce, Ph.D. dissertation, UCD
2007 - 2008	Advisor, Xian Lu, Master's Thesis, UCD
2008	Committee member, William Feser, Master's Thesis, UCD
2007 - 2008	Advisor, Yu Zhang, Master's Thesis, UCD
2007 - 2008	Committee member, Lori Silveira, Master's Thesis, UCD
2007 - 2009	Committee member, Xiang Lin, Ph.D. dissertation, UCD
2009 - 2010	Advisor, Edward Hess, Master's Thesis, UCD
2009 - Date	Co-advisor, Stefan Sillau, Ph.D. dissertation, UCD
2009 - Date	Biostatistician, Colby Adams, Ph.D. dissertation, CSU
2010 - 2011	Committee member, Lori Silveira, Ph.D., dissertation (Epidemiology), UCD

**Graduate Student Research Projects (Department of Biostatistics and Bioinformatics,
National Jewish Health, Denver, CO)**

- 2003 Hosted and supervised Jud Blatchford, paid summer intern.
2006 Hosted and supervised Bruce Swihart, paid summer intern.

Grants

Dr. Strand has collaborated with investigators at National Jewish Health on numerous funded research projects (2001 to present). He also wrote and attained an NIH R03 grant for development of methods involving regression calibration, measurement error models and nonparametric regression, for application with air pollution and health data (2009-2011). More detailed information on grant funding is available upon request.

Published Articles

1. Strand M and Boes D. Modeling road racing times using extreme value theory. *Am Statist* 52:205-210, 1998.
2. Strand M and Higgins J. Using isotonic regression to improve estimation in factorial experiments with ordered factor levels. *Proc Kansas State Univ Conf on Applied Stat in Agriculture*:95-104, 1999.
3. Strand M. A generalized nonparametric test for lattice-ordered means. *Biometrics* 56:1222-1226, 2000.
4. Boyle TP and Strand M. The status of the macroinvertebrate community in the St. Croix River, Minnesota and Wisconsin: An examination of ecological health using techniques of multivariate analysis. *Aquatic Ecosystem Health Mgmt* 4(3):311-325, 2001.
5. Strand M. Comparison of methods for monotone nonparametric multiple regression. *Commun Stat: Simulation and Computation* 32(1):165-178,2003.
6. Boyle TP and Strand M. Macroinvertebrate community structure and related environmental variables in two forks of the Virgin River, Utah. *Western North Am Naturalist* 63:155-166, 2003.
7. Sorensen B, Streib JE, Strand M, Make B, Giclas PC, Fleshner M and Jones JF. Complement activation in a model of chronic fatigue syndrome. *J Allergy Clin Immunol* 112:397-403, 2003.
8. Strand M, Bhasin S and Liu H-P. A set of nonparametric tests for experiments with lattice-ordered means: Theory, programs and applications. *J Stat Software* 9(6):1-16, 2004.

9. Chan ED, Laurel V, Strand MJ, Chan JF, Huynh ML, Goble M and Iseman MD. Treatment and outcome analysis of 205 patients with multidrug-resistant tuberculosis. *Am J Respir Crit Care Med* 169:1103-1109, 2004.
10. Balzar S, Chu HW, Silkoff P, Cundall M, Trudeau JB, Strand M and Wenzel S. Increased TGF-beta2 in severe asthma with eosinophilia. *J Allergy Clin Immunol* 115:110-117, 2005.
11. Balzar S, Chu HW, Strand M and Wenzel S. Relationship of small airway chymase-positive mast cells and lung function in severe asthma. *Am J Respir Crit Care Med* 171:431-439, 2005.
12. Silkoff PE, Lent AM, Busacker AA, Katial RK, Balzar S, Strand M and Wenzel SE. Exhaled nitric oxide identifies the persistent eosinophilic phenotype in severe refractory asthma. *J Allergy Clin Immunol* 116:1249-1255, 2005.
13. Strand M. Every scatterplot tells a story: A look at the performance of long distance runners. *STATS: The magazine for students of statistics*, Fall 2005 / Winter 2006, pages 7-11.
14. Strand M, Vedal S, Rodes C, Dutton SJ, Gelfand EW, Rabinovitch N. Estimating effects of ambient PM_{2.5} exposure on health using PM_{2.5} component measurements and regression calibration. *J Expo Sci Environ Epidemiol* 16:30-38, 2006. Erratum: *J Expo Sci Environ Epidemiol*. 17: 122, 2007.
15. Goleva E, Ling-bo L, Taylor Eves P, Strand M, Martin R, Leung D. Increased Glucocorticoid Receptor Beta Alters Steroid Response in Glucocorticoid Insensitive Asthma. *Am J Respir Crit Care Med*, 173:607-616, 2006.
16. Rabinovitch N, Strand M and Gelfand EW. Particulate levels are associated with early asthma worsening in children with persistent disease. *Am J Respir Crit Care Med* 173: 1098-1105, 2006.
17. Balzar S, Strand M, Nakano T, Wenzel S. Subtle immunodeficiency in severe asthma: IgA and IgG₂ correlate with lung function and symptoms. *Int Arch Allergy Immunol* 140:96-102, 2006.
18. Halkjær LB, Loland L, Buchvald FF, Agner T, Skov L, Strand M, Bisgaard H. Development of Atopic Dermatitis during the first 3 years of life. *Arch Dermatol* 142:561-566, 2006.
19. Lent AM, Harbeck R, Strand M, Sills M, Schmidt K, Efaw B, Lebo T, Nelson HS. Immunological Response to Administration of Standardized Dog Allergen Extract at Differing Doses. *J Allergy Clin Immunol* 118:1249-1256, 2006.

20. Balzar S, Strand M, Rhodes D, Wenzel SE. IgE expression pattern in lung: relation to systemic IgE and asthma phenotypes. *J Allergy Clin Immunol* 119:855-862, 2007.
21. Moscoso T, Strand M, Berg GD, Grunwald GK. Estimating the Impact of a Congestive Heart Failure Disease Management Program on Prescription Drug Use in a State Medicaid Program. *Dis Manage Health Outcomes* 15:33-40, 2007.
22. Mayer AS, Stoller JK, Vedal S, Ruttenber AJ, Strand M, Sandhaus RA, Newman LS. Risk factors for symptom onset in PI*Z alpha-1 antitrypsin deficiency. *Int J COPD* 1: 485-492, 2007.
23. Strand M, Hopke PH, Zhao W, Vedal S, Gelfand EW and Rabinovitch N. A study of health effect estimates using competing methods to model personal exposures to ambient PM_{2.5}. *J Expo Sci Environ Epidemiol* 17: 549-558, 2007.
24. Klinnert MD, Liu AH, Pearson MR, Tong S, Strand M, Luckow A, Robinson JL. Outcome of a Randomized Multifaceted Intervention With Low-Income Families of Wheezing Infants. *Arch Pediatr Adolesc Med* 161: 783-790, 2007.
25. Li L, Strand M, Leung DYM and Goleva E. ATF2 impairs glucocorticoid receptor-mediated transactivation in human CD8⁺ T cells. *Blood* 110: 1570-1577, 2007.
26. Chan ED, Kaminska AM, Gill W, Chmura K, Feldman NE, Bai X, Floyd CM, Fulton KE, Huitt GA, Strand M, Iseman MD and Shapiro L. Alpha-1-antitrypsin (AAT) anomalies are associated with lung disease due to rapidly growing mycobacteria and AAT inhibits *Mycobacterium abscessus* infection of macrophages. *Scand J Infect Dis* 39: 690-696, 2007.
27. Sarnat JA, Wilson WE, Strand M, Brook J, Wyzga R, Lumley T. Panel discussion review: session one – exposure assessment and related errors in air pollution epidemiologic studies. *J Expo Sci Environ Epidemiol* 17: S75-S82, 2007.
28. Klinnert MD, Kaugars AS, Strand M, Silveira L. Family psychological factors in relation to children's asthma status and behavioral adjustment at age 4. *Family Process* 47: 41-61, 2008.
29. Rabinovitch N, Strand M, Stuhlman K and Gelfand EW. Exposure to tobacco smoke increases leukotriene E4-related albuterol usage and response to montelukast. *J Allergy Clin Immunol* 121: 1365-1371, 2008.
30. Chan ED, Strand M and Iseman MD. Treatment Outcomes in Extensively Resistant Tuberculosis. *N Engl J Med* 359 (6): 657-659, Aug. 7, 2008.
31. Sutherland ER, Goleva E, Strand M, Beuther DA, Leung DYM. Body mass and glucocorticoid response in asthma. *Am J Respir Crit Care Med* 178: 682-687, 2008.

32. Carel K, Bratton DL, Miyazawa N, Gyorkos E, Kelsay K, Bender B, Strand M, Atkins D, Gelfand EW, Klinnert MD. The Atopic Dermatitis Quickscore (ADQ): validation of a new parent-administered atopic dermatitis scoring tool. *Ann Allergy Asthma Immunol* 101: 500-507, 2008.
33. Chan ED, Strand M, Iseman MD. Multidrug-Resistant Tuberculosis (TB) resistant to fluoroquinolones and streptomycin but susceptible to second-line injection therapy has a better prognosis than Extensively Drug-Resistant TB. *Clin Infect Dis* 48 (5): e50-e52, March 2009.
34. Bisgaard H, Halkjaer LB, Hinge R, Giwercman C, Palmer C, Silveira S, Strand M. Risk analysis of early childhood eczema. *J Allergy Clin Immunol* 123: 1355-1360.e5, 2009.
35. Mroz MM, Maier L, Strand M, Silveira L, Newman L. Beryllium lymphocyte proliferation test surveillance identifies clinically significant Beryllium Disease. *Am J Ind Med* 52: 762-773, 2009.
36. Feser WJ, Fingerlin TE, Strand M, Glueck DH. Calculating average power for the Benjamini and Hochberg procedure. *J Appl Stat Sci* 8: 325-352, 2009.
37. Broccardo CJ, Mahaffey SB, Strand M, Reisdorph NA, Leung DYM. Peeling off the layers: Skin taping and a novel proteomics approach to study atopic dermatitis. *J Allergy Clin Immunol*, 124: 1113-1115, 2009.
38. Strand M, Zhang Y, BJ Swihart. Monotone Nonparametric Regression and Confidence Intervals. *Commun Stat: Simulation and Computation*, 39: 828-845, 2010.
39. Swihart BJ, Caffo B, James BD, Strand M, Schwartz BS, Punjabi NM. Lasagna Plots: A Saucy Alternative to Spaghetti Plots. *Epidemiology*, 21(5):621-625, 2010.
40. Katial RK, Strand M, Prasertsuntarasai T, Leung R, Zheng W, Alam R. The effect of aspirin desensitization on novel biomarkers in aspirin-exacerbated respiratory diseases. *J Allergy Clin Immunol*, 126(4):738-744, 2010.
41. Van Dyke MV, Martyny JW, Mroz MM, Silveira LJ, Strand M, Cragle D, Tankersley WG, Wells SM, Newman LS, Maier LA. Exposure and genetics increase risk of beryllium sensitization and chronic beryllium disease in the nuclear weapons industry. *Occup Environ Med*, doi:10.1136/oem.2010.064220, 2010.
42. Rabinovitch N, Silveira L, Gelfand EW, Strand M. The response of children with asthma to ambient particulate is modified by tobacco smoke exposure. *Am J Respir Crit Care Med*, doi:10.1164/rccm.201010-1706OC, Aug. 25, 2011.
43. Ahmad S, Nichols D, Strand M, Reynolds SD, Randell SH, White CW, Ahmad A. SERCA2 regulates non-CF and CF airway epithelial cell response to ozone. Accepted, *PLoS ONE*, 2011.

Selected Talks, Presentations and Coordinated Events

1. Presentation: Using isotonic regression to improve estimation in factorial experiments with ordered factor levels. *Kansas State University Conference on Applied Statistics in Agriculture*, Manhattan, Kansas, 1999.
2. Seminar: Using audio-video (AV) equipment in the classroom for introductory statistics courses. *UCLA Seminar*, April 2001.
3. Presentation: Efficient use of personal exposure data and regression calibration in ambient air pollution and health studies. Joint meeting of the Western North American Region (WNAR) of the International Biometric Society and the Institute of Mathematical Statistics (IMS), Flagstaff, Arizona, June 2006.
4. Presentation: Monotone nonparametric regression: methods and applications in environmental and health studies. PMB Seminar Series, UCDHSC, Denver, Colorado, February 26, 2007.
5. Invited talk: Stat 586 consulting class (Colorado State University), February 11, 2008.
6. Presentation: Monotone nonparametric regression and the air pollution and asthma application. Biostatistics seminar series, UCDHSC, Denver, Colorado, April 9, 2008.
7. Presentation: An examination of methods to estimate personal exposures to ambient PM_{2.5} through data analysis (Rabinovitch N, Vedal S, Hopke P, co-authors). *Joint Conference of the International Society of Environmental Epidemiology (ISEE) and International Society of Exposure Analysis (ISEA)*, Pasadena, California, October 15, 2008.
8. Organized and chaired the Fall meeting for the CO/WY Chapter of the ASA, with 6 speakers, Anschutz Medical Campus, November 7, 2008.
9. Organized and chaired the Fall meeting for the CO/WY Chapter of the ASA, with 11 speakers, Anschutz Medical Campus, September 30, 2011.
10. Invited talk: Statistical models for multivariate data. Epidemiology Discussion Group, Colorado School of Public Health, Aurora, Colorado, November 2, 2011.