

Brandon R. Grossardt

*Division of Biomedical Statistics and Informatics
Department of Health Sciences Research
Mayo Clinic*



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Personal Information

Place of Birth: Great Bend, Kansas (USA)
Citizenship: United States of America
Languages: English (native), Italian (advanced), German (intermediate)

Present Position

Biostatistician III, Mayo Clinic, Rochester, Minnesota 2010-
Teaching and Examining Privileges, Mayo Graduate School 2008-

Education

- M.S. in Statistics, Kansas State University 2003
- B.S. in Mathematics, *summa cum laude* (97th percentile), Kansas State University 2001

Honors and Awards

- The North American Menopause Society Best Paper Award (see article 21) 2009
- International Prize for Research and Innovation Related to Wellbeing 2008
Honorable mention, Premio Benessere Stresa (see article 15)
- Graduate Scholar Fellowship, Kansas State University 2001-2003
- [Phi Beta Kappa](#) honorary, Beta of Kansas Chapter, Kansas State University 2001
▷ *One of 47 inducted at KSU*
- [Barry M. Goldwater National Scholar](#) in Mathematics & Engineering 2000
▷ *One of 309 awarded in the United States*
- [Ronald E. McNair National Scholar](#) 1999
▷ *Project: Cryptanalysis - investigating the cyclic nature of block matrix ciphers*
- Semester Academic Honors 1997-2001
- [Robert C. Byrd National Honors Scholarship](#), Kansas Recipient 1997-2001
▷ *One of 60 awarded in the state of Kansas*
- Valedictorian, Claflin Jr/Sr High School, Kansas 1997

Previous Professional Positions

- Biostatistician II, Mayo Clinic, Rochester, Minnesota 2006-2010
- Biostatistician I, Mayo Clinic, Rochester, Minnesota 2003-2006
- Instructor of Statistics, Kansas State University, Manhattan, Kansas 2001-2003

Software and Technical Skills

- *Software*: SAS (10 years), S-Plus/R (6 years), Perl (3 years), \LaTeX (10+ years), Unix (10 years), Windows (10+ years), Microsoft Office Suite (Word, Excel, Powerpoint; 10+ years).
- *Analysis methods*: Linear regression, survival analysis (Cox regression), logistic regression, quantile regression, mixed effects models, repeated measures analysis, incidence rates, prevalence rates, mortality rates, reliability, validity, recursive partitioning analysis, principle components analysis, epidemiologic methods.

Educational Activities

Teaching activities

- ROC curves in SAS®
Cardiovascular team meeting, Div. of Biostatistics Jan 2004
- Graphics: The Good, the Bad, and those created by USA Today®
Applied Statistics Seminar, Mayo Clinic Jul 2004
- Genetic Epidemiology Book Club, chapter 5 leader
Familial Aggregation, Div. of Biostatistics, Mayo Clinic Feb 2006
- Genetic Epidemiology Book Club, chapter 11 leader
Gene Characterization (GxE, GxG interactions), Div. of Biostatistics, Mayo Clinic Nov 2006
- Study Design: Introduction to Epidemiology
Dept. of Nephrology and Hypertension, Mayo Clinic College of Medicine Feb 2007
Nov 2009
Aug 2011
- Statistical Techniques and Study Logistics
Dept. of Nephrology and Hypertension, Mayo Clinic Mar 2007
Nov 2009
Aug 2011
- Neurotic Personality and Mortality
Applied Statistics Seminar, Mayo Clinic Nov 2009
- Human Evolutionary Genetics Book Club, chapter 15 leader
Identity and Identification, Mayo Clinic Jan 2010
- Construction of the REP Census
Centers for Disease Control (CDC) site visit, Mayo Clinic May 2010
- Population Denominators and Incidence/Prevalence Rates
CTSC 5320: Population-Based Research Using the REP June 2010
- Applied Statistics Seminar, Coordinator
Monthly Divisional Seminar Series 2011-

Mentorship

- Statistical Programmer Analyst, methodologic mentorship
Rachel E. Gullerud, BS 2003-2006
Kevin R. Sanft, BS 2003-2005
Justin M. Carlin, BA 2006-2010
- Clinical Research Training Program, statistical mentorship of MSc thesis project
Gennarina Arabia, MD 2005-2007
Cathleen M. Rivera, MD 2006-2008
Rodolfo Savica, MD 2007-2009
Maire Brid Mac Bride, MBBCh (committee member) 2008-
Crystal N. Pruitt, medical student 2010-
Lily C. Wong-Kisiel, MD (committee member) 2011-
- Other statistical mentorship
Roberta Frigerio, MD 2003-2005
Florise A. Lambrechtsen, MD 2006
Aïcha Soumaré, PhD 2008-2009
Aleksandar Denic, PhD candidate 2010-2011
Rodolfo Savica, MD, MSc 2010-

Academic career development activities

- Advanced Survival Analysis (HSR 5840) Jul 2003
Vera J. Suman, PhD: Mayo Clinic Dept. of Health Sciences Research

- Clinical Appraisal of Epidemiologic Methods in the Literature (HSR 5832) Apr 2004
Walter A. Rocca, MD, MPH: Mayo Clinic Dept. of Health Sciences Research
- Population Statistical Genetics (STAT 536 audit) Fall 2004
Karin Dorman, PhD: Iowa State University
- Second International Course of Neuroepidemiology Nov 2004
Methods and Clinical Applications; Erice (Sicily), Italy
- American Academy of Neurology Apr 2005
57th Annual Meeting; Miami, Florida
- Project Management (Class 141509, 14 hours) Jun 2005
Richard DeBlicek, MBA: Mayo Clinic Human Resources
- Communicating Across Styles (Class 141405, 3.5 hours) Jun 2005
Amy S. Tolbert, PhD: Mayo Clinic Human Resources
- A Second Course on Repeated Measures Analysis (visiting lecturer, 8 hours) Jan 2006
James Rochon, PhD: Duke Clinical Research Institute
- Understanding Differences: Introductory MBTI Workshop (Class 163311, 4 hours) Mar 2006
Marilyn Corrigan, MA: Mayo Clinic Human Resources
- American Academy of Neurology Apr 2006
58th Annual Meeting; San Diego, California
- Survival Data Analysis for Biomedical Applications (STAT 566 audit) Fall 2006
Terry Therneau, PhD: Iowa State University
- Third International Course of Neuroepidemiology Nov 2006
Methods and Clinical Applications; Erice (Sicily), Italy
- American Academy of Neurology May 2007
59th Annual Meeting; Boston, Massachusetts
- Fourth International Course of Neuroepidemiology Nov 2008
Methods and Clinical Applications; Erice (Sicily), Italy

Presentations and Invited Presentations at National and International Meetings

- *Cryptanalysis: investigating the cyclic nature of block matrix ciphers*, Presented at Aug 1999
The Seventh Annual Ronald E. McNair Research Conference, The Pennsylvania State University, State College, Pennsylvania.
- *Cryptanalysis: investigating the cyclic nature of block matrix ciphers*, Presented at Mar 2000
The USC National McNair Research Conference, University of Southern California, Los Angeles, California.
- *Survival and expectations after graduation*, Invited lecture, Dept. of Mathematics Oct 2003
Undergraduate Lecture Series, KSU, Manhattan, Kansas.
- *The Mayo Clinic Cohort Study of Personality and Aging: design, sampling, and baseline results*, Poster presented at The Annual Meeting of the World Federation of Neurology, Research Group on Neuroepidemiology. Miami Beach, Florida. Apr 2005
- *The Mayo Clinic Cohort Study of Oophorectomy and Aging: design and follow-up description*, Poster presented at The Annual Meeting of the World Federation of Neurology, Research Group on Neuroepidemiology. San Diego, California. Apr 2006
- *Statistics in epidemiologic research*, Invited adjunct faculty, Third International Course of Neuroepidemiology, Ettore Majorana Centre for Scientific Culture, Erice (Sicily), Italy. Nov 2006
- *The role of mathematics in medical research*, Invited lecture, Dept. of Mathematics Undergraduate Lecture Series, KSU, Manhattan, Kansas. Nov 2006
- *Risk of neurological and psychiatric disorders in relatives of patients with Parkinson's disease*, Presented at The Annual Meeting of the World Federation of Neurology, Research Group on Neuroepidemiology, Boston, Massachusetts. May 2007

- *A statistician's role in research at Mayo Clinic: scientific collaboration beyond statistical modeling*, Invited lecture, The Institute for Medical Informatics, Statistics, and Documentation; The Medical University of Graz, Austria. Oct 2007
- *Neurotic personality traits and long-term mortality: a 40-year follow-up*, Interview lecture, Mid-America Heart Institute, Kansas City, Missouri. Jul 2008
- *Neurotic personality traits and long-term mortality: a 40-year follow-up*, Invited adjunct faculty, Fourth International Course of Neuroepidemiology, Ettore Majorana Centre for Scientific Culture, Erice (Sicily), Italy. Nov 2008
- *Lies and the Lying Liars Who Tell Them*, Invited lecture, Dept. of Mathematics Undergraduate Lecture Series, KSU, Manhattan, Kansas. Nov 2010

Professional Interests

- Epidemiology, Women's Health, Neurology, Demography
- Survival Analysis, Life Tables, Expected Survival
- Generalized Linear Mixed Models, Repeated Measures Analysis
- Efficient Display of Data, Technical & Scientific Writing

Peer Reviewed Publications

1. Kullo IJ, Seward JB, Bailey KR, Bielak LF, **Grossardt BR**, Sheedy PF 2nd, Peyser PA, Turner ST: C-reactive protein is related to arterial wave reflection and stiffness in asymptomatic subjects from the community. *Am J Hypertens.* 2005;18(8):1123-1129. PMID: 16109328.
2. Osranek M, Bursi F, Bailey KR, **Grossardt BR**, Brown RD Jr, Kopecky SL, Tsang TS, Seward JB: Left atrial volume predicts cardiovascular events in patients originally diagnosed with lone atrial fibrillation: three-decade follow-up. *Eur Heart J.* 2005;26(23):2556-2561. Free full text. PMID: 16141257.
3. Frigerio R, Elbaz A, Sanft KR, Peterson BJ, Bower JH, Ahlskog JE, **Grossardt BR**, de Andrade M, Maraganore DM, Rocca WA: Education and occupations preceding Parkinson disease: a population-based case-control study. *Neurology.* 2005;65(10):1575-1583. PMID: 16301484.
4. Rocca WA, **Grossardt BR**, Peterson BJ, Bower JH, Trenerry MR, Ahlskog JE, Sanft KR, de Andrade M, Maraganore DM: The Mayo Clinic cohort study of personality and aging: design and sampling, reliability and validity of instruments, and baseline description. *Neuroepidemiology.* 2006;26(3):119-129. PMID: 16424675.
5. Liang HY, Cauduro SA, Pellikka PA, Bailey KR, **Grossardt BR**, Yang EH, Rihal C, Seward JB, Miller FA, Abraham TP: Comparison of usefulness of echocardiographic Doppler variables to left ventricular end-diastolic pressure in predicting future heart failure events. *Am J Cardiol.* 2006;97(6):866-871. PMID: 16516591.
6. Graves JW, **Grossardt BR**, Gullerud RE, Bailey KR, Feldstein J: The trained observer better predicts daytime ABPM diastolic blood pressure in hypertensive patients than does an automated (Omron) device. *Blood Press Monit.* 2006;11(2):53-58. PMID: 16534405.
7. Graves JW, Bailey KR, **Grossardt BR**, Gullerud RE, Meverden RA, Grill DE, Sheps SG: The impact of observer and patient factors on the occurrence of digit preference for zero in blood pressure measurement in a hypertension specialty clinic: evidence for the need of continued observation. *Am J Hypertens.* 2006;19(6):567-572. PMID: 16733227.
8. Frigerio R, Sanft KR, **Grossardt BR**, Peterson BJ, Elbaz A, Bower JH, Ahlskog JE, de Andrade M, Maraganore DM, Rocca WA: Chemical exposures and Parkinson's disease: a population-based case-control study. *Mov Disord.* 2006;21(10):1688-1692. PMID: 16773614.
9. Rocca WA, **Grossardt BR**, de Andrade M, Malkasian GD, Melton LJ 3rd: Survival patterns after oophorectomy in premenopausal women: a population-based cohort study. *Lancet Oncol.* 2006;7(10):821-828. PMID: 17012044.
10. **Grossardt BR**, Graves JW, Gullerud RE, Bailey KR, Feldstein J: The occurrence of the alerting response is independent of the method of blood pressure measurement in hypertensive patients. *Blood Press Monit.* 2006;11(6):321-327. PMID: 17106316.
11. Schüpbach MW, Welter ML, Bonnet AM, Elbaz A, **Grossardt BR**, Mesnage V, Houeto JL, Maltête D, Mallet L, Rocca WA, Mallet A, Agid Y: Mortality in patients with Parkinson's disease treated by stimulation of the subthalamic nucleus. *Mov Disord.* 2007;22(2):257-261. PMID: 17149702.

12. Frigerio R, Breteler MM, de Lau LM, Sanft KR, Bower JH, Ahlskog JE, **Grossardt BR**, de Andrade M, Maraganore DM, Rocca WA: Number of children and risk of Parkinson's disease. *Mov Disord.* 2007;22(5):632-639. PMID: 17265462.
13. Rocca WA, Bower JH, Ahlskog JE, Elbaz A, **Grossardt BR**, McDonnell SK, Schaid DJ, Maraganore DM: Increased risk of essential tremor in first-degree relatives of patients with Parkinson's disease. *Mov Disord.* 2007;22(11):1607-1614. PMID: 17546668.
14. Rocca WA, Bower JH, Maraganore DM, Ahlskog JE, **Grossardt BR**, de Andrade M, Melton LJ 3rd: Increased risk of parkinsonism in women who underwent oophorectomy before menopause. *Neurology.* 2008;70(3):200-209. PMID: 17761549.
15. Rocca WA, Bower JH, Maraganore DM, Ahlskog JE, **Grossardt BR**, de Andrade M, Melton LJ 3rd: Increased risk of cognitive impairment or dementia in women who underwent oophorectomy before menopause. *Neurology.* 2007;69(11):1074-1083. PMID: 17761551.
16. Rocca WA, Bower JH, Ahlskog JE, Elbaz A, **Grossardt BR**, McDonnell SK, Schaid DJ, Maraganore DM: Risk of cognitive impairment or dementia in relatives of patients with Parkinson disease. *Arch Neurol.* 2007;64(10):1458-1464. Free full text. PMID: 17923629.
17. Arabia G, **Grossardt BR**, Geda YE, Carlin JM, Bower JH, Ahlskog JE, Maraganore DM, Rocca WA: Increased risk of depressive and anxiety disorders in relatives of patients with Parkinson disease. *Arch Gen Psychiatry.* 2007;64(12):1385-1392. Free full text. PMID: 18056546.
18. Rocca WA, **Grossardt BR**, Maraganore DM: The long-term effects of oophorectomy on cognitive and motor aging are age dependent. *Neurodegener Dis.* 2008;5(3-4):257-260. Free full text. PMID: 18322406.
19. Bailey KR, **Grossardt BR**, Graves JW: Novel use of Kaplan-Meier methods to explain age and gender differences in hypertension control rates. *Hypertension.* 2008;51(4):841-847. Free full text. PMID: 18332285.
20. Shuster LT, Gostout BS, **Grossardt BR**, Rocca WA: Prophylactic oophorectomy in premenopausal women and long-term health. *Menopause Int.* 2008;14(3):111-116. Review. Free full text. PMID: 18714076.
21. Rocca WA, **Grossardt BR**, Geda YE, Gostout BS, Bower JH, Maraganore DM, de Andrade M, Melton LJ 3rd: Long-term risk of depressive and anxiety symptoms after early bilateral oophorectomy. *Menopause.* 2008;15(6):1050-1059. PMID: 18724263.
22. Rivera CM, **Grossardt BR**, Rhodes DJ, Brown RD Jr, Roger VL, Melton LJ 3rd, Rocca WA: Increased cardiovascular mortality after early bilateral oophorectomy. *Menopause.* 2009;16(1):15-23. Free full text. PMID: 19034050.
23. Rocca WA, Shuster LT, **Grossardt BR**, Maraganore DM, Gostout BS, Geda YE, Melton LJ 3rd: Long-term effects of bilateral oophorectomy on brain aging: unanswered questions from the Mayo Clinic Cohort Study of Oophorectomy and Aging. *Womens Health (Lond Engl).* 2009;5(1):39-48. Free full text. PMID: 19102639.
24. **Grossardt BR**, Bower JH, Geda YE, Colligan RC, Rocca WA: Pessimistic, anxious, and depressive personality traits predict all-cause mortality: The Mayo Clinic cohort study of personality and aging. *Psychosom Med.* 2009;71(5):491-500. PMID: 19321849.
25. Rivera CM, **Grossardt BR**, Rhodes DJ, Rocca WA: Increased mortality for neurological and mental diseases following early bilateral oophorectomy. *Neuroepidemiology.* 2009;33(1):32-40. Free full text. PMID: 19365140.
26. Savica R, Bower JH, Maraganore DM, **Grossardt BR**, Rocca WA: Bell's palsy preceding Parkinson's disease: a case-control study. *Mov Disord.* 2009;24(10):1530-1533. PMID: 19526588.
27. Shuster LT, Rhodes DJ, Gostout BS, **Grossardt BR**, Rocca WA: Premature menopause or early menopause: long-term health consequences. *Maturitas.* 2010;65(2):161-166. PMID: 19733988.
28. Savica R, **Grossardt BR**, Carlin JM, Icen M, Bower JH, Ahlskog JE, Maraganore DM, Steensma DP, Rocca WA: Anemia or low hemoglobin levels preceding Parkinson disease: a case-control study. *Neurology.* 2009;73(17):1381-1387. PMID: 19858460.
29. Savica R, Carlin JM, **Grossardt BR**, Bower JH, Ahlskog JE, Maraganore DM, Bharucha AE, Rocca WA: Medical records documentation of constipation preceding Parkinson disease: a case-control study. *Neurology.* 2009;73(21):1752-1758. PMID: 19933976.

30. Rocca WA, **Grossardt BR**, Shuster LT: Oophorectomy, menopause, estrogen, and cognitive aging: the timing hypothesis. *Neurodegener Dis.* 2010;7(1-3):163-166. PMID: 20197698.
31. Graves JW, **Grossardt BR**: Discarding the first of three nurse-auscultatory or oscillometric blood pressure measurements does not improve the association of office blood pressure with ABPM. *Blood Press Monit.* 2010;15(3):146-151. PMID: 20407368.
32. Arabia G, **Grossardt BR**, Colligan RC, Bower JH, Maraganore DM, Ahlskog JE, Geda YE, Rocca WA: Novelty seeking and introversion do not predict the long-term risk of Parkinson disease. *Neurology.* 2010;75(4):349-357. PMID: 20660865.
33. Bower JH, **Grossardt BR**, Maraganore DM, Ahlskog JE, Colligan RC, Geda YE, Therneau TM, Rocca WA: Anxious personality predicts an increased risk of Parkinson's disease. *Mov Disord.* 2010;25(13):2105-13. PMID: 20669309.
34. Rocca WA, **Grossardt BR**, Shuster LT: Oophorectomy, menopause, estrogen treatment, and cognitive aging: clinical evidence for a window of opportunity. *Brain Res.* 2011;1379:188-98. PMID: 20965156.
35. Shuster LT, **Grossardt BR**, Gostout BS, Rocca WA: Prophylactic bilateral oophorectomy jeopardizes long-term health. *Menopausal Medicine.* Oct 2010;18(4):S1-S5. [Free full text.](#) (not indexed in PubMed).
36. Wirrell EC, **Grossardt BR**, So EL, Nickels KC: A population-based study of long-term outcomes of cryptogenic focal epilepsy in childhood: Cryptogenic epilepsy is probably not symptomatic epilepsy. *Epilepsia.* 2011;52(4):738-45 PMID: 21320114.
37. St Sauver JL, **Grossardt BR**, Yawn BP, Melton LJ 3rd, Rocca WA: Use of a medical records linkage system to enumerate a dynamic population over time: the Rochester Epidemiology Project. *Am J Epidemiol.* 2011 May 1;173(9):1059-68. PMID: 21430193.
38. Wirrell EC, **Grossardt BR**, Wong-Kisiel LC, Nickels KC: Incidence and classification of new-onset epilepsy and epilepsy syndromes in children in Olmsted County, Minnesota from 1980-2004: A population-based study. *Epilepsy Res.* 2011 Jun;95(1-2):110-8. PMID: 21482075.
39. Savica R, **Grossardt BR**, Bower JH, Klassen BT, Matsumoto JY: Clinical failure of botulinum toxin A in movement disorders. *Parkinsonism Relat Disord.* Epub 2011 Aug 29. PMID: 21880538.
40. Rocca WA, **Grossardt BR**, Miller VM, Shuster LT, Brown RD Jr: Premature menopause or early menopause and risk of ischemic stroke. *Menopause.* Epub 2011 Oct 6. PMID: 21993082.
41. Denic A, Macura SI, Warrington AE, Pirko I, **Grossardt BR**, Pease LR, Rodriguez M: A single dose of neuron-binding human monoclonal antibody improves spontaneous activity in a murine model of demyelination. *PLoS One.* 2011;6(10):e26001. PMID: 22022490.
42. Rocca WA, **Grossardt BR**, Shuster LT, Stewart EA: Hysterectomy, oophorectomy, estrogen, and the risk of dementia. *Neurodegener Dis.*, in press.

Submitted

- S. St Sauver JL, **Grossardt BR**, Leibson CL, Yawn BP, Melton LJ 3rd, Rocca WA: Generalizability of epidemiologic findings and public health decisions: an illustration from the Rochester Epidemiology Project. *Mayo Clinic Proceedings*, submitted 19 Aug 2011.
- S. Rocca WA, Yawn BP, St. Sauver JL, **Grossardt BR**, Melton LJ 3rd: History of the Rochester Epidemiology Project: 45 Years of Medical Records-linkage in an American Population. *Am J Public Health*, submitted 24 Nov 2010.
- S. Savica R, **Grossardt BR**, Ahlskog JE, Rocca WA: Metabolic conditions preceding Parkinson disease: a case-control study. *Mov Disord.*, to be submitted.

Editorials and Letters to the Editor

1. Graves JW, **Grossardt BR**, Gullerud RE, Bailey KR, Feldstein J: Reply to letter to the editor: The trained observer better predicts daytime ambulatory blood pressure measurement diastolic blood pressure in hypertensive patients than does an automated (Omron) device. *Blood Press Monit.* 2007;12(1):57-59.
2. Rocca WA, Savica R, Ahlskog JE, **Grossardt BR**: Hemoglobin levels in idiopathic and genetic Parkinson disease: Reply from the authors. *Neurology.* 2010;74(20):1655-1656.

Abstracts Published in Journals

- List available upon request.

Miscellaneous Scientific Contributions

1. Kullo IJ, Bailey KR, McConnell JP, Peyser PA, Bielak LF, Kardina SL, Sheedy PF II, Boerwinkle E, Turner ST: Low-density lipoprotein particle size and coronary atherosclerosis in subjects belonging to hypertensive sibships. *Am J Hypertens.* 2004;17(9):845-851. PMID: 15363830.
2. Kullo IJ, Bailey KR, Bielak LF, Sheedy PF, Klee GG, Kardina SL, Peyser PA, Boerwinkle E, Turner ST: Lack of association between lipoprotein(a) and coronary artery calcification in the Genetic Epidemiology Network of Arteriopathy (GENOA) study. *Mayo Clin Proc.* 2004;79(10):1258-1263. Free full text. PMID: 15473406.
3. Ommen SR, Maron BJ, Olivotto I, Maron MS, Cecchi F, Betocchi S, Gersh BJ, Ackerman MJ, McCully RB, Dearani JA, Schaff HV, Danielson GK, Tajik AJ, Nishimura RA: Long-term effects of surgical septal myectomy on survival in patients with obstructive hypertrophic cardiomyopathy. *J Am Coll Cardiol.* 2005;46(3):470-476. PMID: 16053960.
4. Lambrechtsen FA, Buchhalter JR: Aborted and refractory status epilepticus in children: a comparative analysis. *Epilepsia.* 2008;49(4):615-625. PMID: 18093148.
5. Soumaré A, Tavernier B, Alperovitch A, Tzourio C, Elbaz A: A cross-sectional and longitudinal study of the relationship between walking speed and cognitive function in community-dwelling elderly people. *J Gerontol A Biol Sci Med Sci.* 2009 Oct;64(10):1058-65. PMID: 19561146.

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