Curriculum Vitae
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Personal Information

Name: Stephen L. Hillis

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Education

Postdoc	UI Psychiatric Epidemiology/Biometry Research Fellowship, 1992-1994	
Postdoc	UI Cardiovascular Center Institutional Research Fellowship, 1991-1992	
Ph.D.	Statistics, 1987	University of Iowa
M.S.	Statistics, 1982	University of Iowa
M.F.A.	Music, 1978	University of Iowa
B.A.	Mathematics and Music, 1972,	University of Iowa

Awards and Honors

2015   International Research Collaboration Award with Prof Brennan at the University of Sydney

2010   American Orthopaedic Foot and Ankle Society Roger A. Mann, M.D. Award for the outstanding clinical study (Amendola, A., Hillis, S.L., Stolley, M.D., Saltzman, C. L., "Prospective randomized controlled trial of motion vs. fixed distraction in treatment of ankle osteoarthritis")

2002   American Orthopaedic Foot & Ankle Society Leonard Goldner Award for outstanding basic research (Tochigi, Y., Amendola, A., Rudert, M.J., Baer, T.E., Brown, T.D., Hillis, S.L., Saltzman, C.L., "Direction of subtalar joint laxity with interosseous, talocalcaneal ligament sectioning")

1997   Orthopaedic Research Society first annual William H. Harris Award (Pedersen, D. R., Brown, T. D., Hillis, S. L., Callaghan, J. J., "Prediction of Long-Term Polyethylene Wear in THA, Based on Early Wear Measurements Made Using Digital Image Analysis")

1982   National Endowment for the Arts Jazz Study Fellowship Grant

1971   Phi Beta Kappa, University of Iowa

Employment History

2011-present   Research Professor (secondary appointment)
Department of Biostatistics
University of Iowa, Iowa City, IA

2010-present   Research Professor
Department of Radiology
University of Iowa, Iowa City, IA

2011-2015   Senior Biostatistician
Comprehensive Access and Delivery Research and Evaluation (CADRE)
Center
Iowa City VA Health Care System, Iowa City, IA

2004-2011   Senior Biostatistician
Center for Research in the Implementation of Innovative Strategies in
Practice (CRIISP)
VA Medical Center, Iowa City, IA

2002-2004   Senior Biostatistician
Program for Interdisciplinary Research in Health Care Organization
VA Medical Center, Iowa City, IA

1994-2002   Director, Statistical Consulting Center
Department of Statistics and Actuarial Science
University of Iowa, Iowa City, IA

1992-1994   Psychiatric Epidemiology and Biometry Research Fellow
Division of Biostatistics, Department of Preventive Medicine
University of Iowa, Iowa City, IA

1991   Iowa Cardiovascular Center Institutional Research Fellow
Division of Biostatistics, Department of Preventive Medicine
University of Iowa, Iowa City, IA

1987-91   Assistant Professor of Statistics
Department of Mathematics and Statistics
The American University, Washington, DC

1988   Statistical Consultant
Public Interest Management Group, Inc.
Washington, DC

1983-1987   Teaching Assistant
             Department of Statistics
             University of Iowa, Iowa City, IA

1984-1986   Research Assistant
             Preventive Medicine Department
             University of Iowa, Iowa City, IA
             (Primary statistician for a medical study conducted at the
             University of Iowa Hospitals)

1986   Editorial Consultant for Professor Robert Woolson
             Preventive Medicine Department
             University of Iowa, Iowa City, IA
             (Edited Robert Woolson's book Statistical Methods for the
             Analysis of Biomedical Data, published by Wiley)

1981-1982   Teaching Assistant
             Business Department
             University of Iowa, Iowa City, IA

1980-1981   Teaching Assistant
             Statistics Department
             University of Iowa, Iowa City, IA

1979-1980   Visiting Artist
             Music Department
             Cornell College, Mt. Vernon, IA

1979   Teaching Assistant
             Music Department
             University of Miami, Coral Gables, FL

1975-1978   Teaching Assistant
             Music Department
             University of Iowa, Iowa City, IA

1972-1974   Quantico Marine Corps Band
             Quantico, VA

Teaching at the University of Iowa

2001-2002   S:161 (Design II), S:173 (Data Analysis)
2000-2001   S:168 (Applied Multivariate Methods), S:173
1999-2000   S:161, S:173
1998-1999   S:161, S:173
1997-1998   S:168, S:173

1996-1997   S:161, S168, S:173
1995-1996   S:168, S:173, S:172 (Generalized Linear Models)

Professional Memberships

Medical Imaging Perception Society (MIPS)
The International Society for Optics and Photonics (SPIE)
American Statistical Association
Biometric Society

Publications in Peer-Reviewed Journals

(Statistical Methodology)

1. **Hillis** SL, Schartz KM (2018). Multi-Reader Sample Size Program for Diagnostic Studies: Demonstration and Methodology. *Journal of Medical Imaging,* 5(4), 045503. doi: 10.1117/1.JMI.5.4.045503

2. **Hillis** SL (2018). Relationship between Roe and Metz simulation model for multireader diagnostic data and Obuchowski-Rockette model parameters. *Statistics in Medicine*, 37, 2067-2093. doi:10.1002/sim.7616.

3. **Hillis** SL, Chakraborty DP, Orton CG (2017). ROC or FROC? It depends on the research question. *Medical Physics* 44(5), 1603-1606. doi: 10.1002/mp.12151

4. **Hillis** SL (2016)**.** Equivalence of binormal likelihood-ratio and bi-chi-squared ROC curve models. *Statistics in Medicine* 35(12), 2031-2057. doi: 10.1002/sim.6816.

5. Gallas BD, **Hillis** SL (2014). Generalized Roe and Metz ROC model: analytic link between simulated decision scores and empirical AUC variances and covariances. *Journal of Medical Imaging*, 1(3), 031006 (2014). doi:10.1117/1.JMI.1.3.031006.

6. **Hillis** SL (2014). A marginal-mean ANOVA approach for analyzing multireader multicase radiological imaging data. *Statistics in Medicine*, 33, 330-360. doi: 10.1002/sim.5926

7. Obuchowski NA, Gallas BD, **Hillis** SL (2012) Multi-reader ROC Studies with Split-plot Designs: A Comparison of Statistical Methods. *Academic Radiology*, 19, 1508-1517. doi: 10.1016/j.acra.2012.09.012

8. **Hillis** SL, Metz CE (2012). An Analytic Expression for the Binormal Partial Area under the ROC Curve. *Academic Radiology* 19, 1491-1498. doi: 10.1016/j.acra.2012.09.009

9. **Hillis** SL. (2012) Simulation of Unequal-Variance Binormal Multireader ROC Decision Data: An Extension of the Roe and Metz Simulation Model. *Academic Radiology*, 19, 1518-1528. doi: 10.1016/j.acra.2012.09.011

10. Zanca F, **Hillis** SL, Claus F, Van Ongeval C, Cells V, Provoost V, Yoon HJ, Bosmans H (2012). Correlation of free-response and receiver-operating-characteristic area-under-the-curve estimates: Results from independently conducted FROC/ROC studies in mammography. *Medical Physics*, 39, 5917-5929.

11. Obuchowski NA, **Hillis** SL (2011). Sample Size Tables for Computer Aided Detection (CAD) Studies, *American Journal of Roentgenology*, 197, W821-827.

12. **Hillis** SL, Obuchowski NA, Berbaum KS (2011). Power estimation for multireader ROC methods: an updated and unified approach, *Academic Radiology*, 18, 129-142.

13. **Hillis** SL, Berbaum KS (2011) Using the mean-to-sigma ratio as a measure of the improperness of binormal ROC curves, *Academic Radiology*, 18, 143-153.

14. **Hillis** SL, Berbaum KS, Metz CE (2008) Recent developments in the Dorfman-Berbaum-Metz procedure for multireader ROC study analysis, *Academic Radiology*, 15:647-661.

15. **Hillis** SL (2007) A comparison of denominator degrees of freedom methods for multiple observer ROC analysis, *Statistics in Medicine*, 26:596-619.

16. **Hillis** SL, Berbaum KS (2005) Monte Carlo validation of the Dorfman-Berbaum-Metz method using normalized pseudovalues and less data-based model simplification, *Academic Radiology*, 12:1534-1541.

17. **Hillis** SL, Obuchowski NA, Schartz KM, Berbaum KS (2005) A comparison of the Dorfman-Berbaum-Metz and Obuchowski-Rockette Methods for receiver operating characteristic (ROC) data, *Statistics in Medicine*, 24:1579-1607.

18. **Hillis** SL, Berbaum KS (2004) Power estimation for the Dorfman-Berbaum-Metz method, *Academic Radiology*, 11, 1260-1273.

19. Obuchowski NA, Beiden SV, Berbaum KS, **Hillis** SL, Ishwaran H, Song HH, Wagner RF (2004) Multi-case ROC analyses: an empirical comparison of five methods. *Academic Radiology*, 11, 980-995.

20. **Hillis** SL & Woolson RF (1996). An iterative weighted least squares algorithm and simulation study for censored data M-estimators, *Communications in Statistics* B, 25, 247-262.

21. **Hillis** SL (1995). Residual plots for the censored data linear regression model, *Statistics in Medicine*, 14, 2023-2036.

22. **Hillis** SL & Davis, CS (1994). A simple justification of the iterative fitting procedure for generalized linear models, *The American Statistician*, 48, 288-289.

23. **Hillis** SL (1994). A heuristic generalization of Smith's Buckley-James variance estimator, *Communications in Statistics* B, 23, 813-832.

24. **Hillis** SL (1993). The equivalence of two Buckley-James variance estimators, *Communications in Statistics* A, 22, 479-484.

25. **Hillis** SL (1993). A comparison of three Buckley-James variance estimators, *Communications in Statistics* B, 22, 955-974.

26. **Hillis** SL (1991). Extending M-Estimation to Include Censored Data via James's Method, *Communications in Statistics* B, 20, 121-128. doi: 10.1111/jan.13699

(Applications)

1. Soh BP, Lee WB, Sim L, Wong J, Hillis S, Tapic KA, Brennan PC. Tele-reporting in breast imaging involving more than one country requires careful consideration. Radiologic Technology (in press)

2. Schwartz TM, **Hillis** SL, Sridharan R, Lukyanchenko O, Geiser W, Whitman GJ, Wei W, Haygood TM (2020). Interpretation time for screening mammography as a function of the number of computer-aided detection marks," *J. Med. Imag.* **7**(2), 022408 (2020), doi: 10.1117/1.JMI.7.2.022408

3. Al Mohammad B, Hillis SL, Reed W, Alakhras M, Brennan PC (2019). Radiologist performance in the detection of lung cancer using CT. *Clinical Radiology*, 74, 67-75. doi: 10.1016/j.crad.2018.10.008

4. Fiala CA, Abbott LI, Carter CD, **Hillis SL**, Wolf JS, Schuster M, Dulski R, Grice EA, Rakel BA, Gardner SE (2018). Severe Pain During Wound Care Procedures: Study Protocol. *Journal of Advanced Nursing*, 74, 1964-1974. doi: 10.1111/jan.13699

5. Bradley CS, Nygaard IE, Hillis SL, Torner JC, Sadler AG (2017). Longitudinal associations between mental health conditions and overactive bladder in women veterans. *American Journal of Obstetrics & Gynecology,* **217**(4), 430.e1-430.e8 doi: 10.1016/j.ajog.2017.06.016

6. Vander Weg MW, Holman JE, Rahman H, Sarrazin MV, Hillis SL Fu SS, Grant KM Prochazka AV, Adams SL, Battaglia CT, Buchanan LM, Tinkelman D, Katz DA (In press, 2017) Implementing smoking cessation guidelines for hospitalized Veterans: Cessation results from the VA-BEST Trial. *Journal of Substance Abuse Treatment*, 77, 79-88. doi: 10.1016/j.jsat.2017.03.015

7. Loesche M, Gardner SE, Kalan L, Horwinski J, Zheng Q, Hodkinson BP, Tyldsley AS, Franciscus CL, **Hillis** SL, Mehta S, Margolis DJ, Grice EA (2017). Temporal stability in chronic wound microbiota is associated with poor healing. *Journal of Investigative*

Dermatology, 137(1), 237-244. doi: 10.1016/j.jid.2016.08.009.

8. Howren MB, Kellerman QD, Hillis SL, Cvengros J, Lawton W, Christensen AJ (2016). Effect of a Behavioral Self-Regulation Intervention on Patient Adherence to Fluid-Intake Restrictions in Hemodialysis: a Randomized Controlled Trial. *Annals of Behavioral Medicine,* 50(2), 167-176. doi: 10.1007/s12160-015-9741-0.

9. (July 2014) Gardner, S. E., Blodgett, N. P., **Hillis**, S. L., Borhart, E., Malloy, L., Abbott, L., Pezzella, P., Jensen, M., Sommer, T., Sluka, K. A., Rakel, B. A. (2014). HI-TENS reduces moderate-to-servere pain associated with most wound care procedures: A pilot study. *Biological Research for Nursing*, 16(3), 310-319 doi: 10.1177/1099800413498639.

10. Katz MD, Holman JE, Johnson SR, Hillis SL, Adams SL, Fu SS, Grant K, Buchanan LM, Prochazka A, Battaglia CT, Titler MG, Joseph AM, Vander Weg MW (2014). Implementing Best Evidence in Smoking Cessation Treatment for Hospitalized Veterans: Results from the VA-BEST Trial. *The Joint Commission Journal on Quality and Patient Safety* 14, 493-502.

11. Gardner SE, Haleem A, Jao YL, Hillis SL, Femino JE, Phisitkul P, Heilmann KP, Lehman SM, Franciscus C L (2014). Cultures of diabetic foot ulcers without clinical signs of infection do not predict outcomes. *Diabetes Care* 37(10), 2693-2701. doi: 10.2337/dc14-0051.

12. Bradley CS, Nygaard IE, Torner JC, Hillis SL, Johnson S, Sadler AG (2014). Overactive bladder and mental health symptoms in recently deployed women veterans. *J.Urology* 191, 1327-1332. doi: 10.1016/j.juro.2013.11.100.

13. Katz DA, Aufderheide TP, Gaeth G, Rahko PS, Hillis SL, Selker HP (2013). Satisfaction and ED revisits in patients with possible acute coronary syndrome. *J Emerg Med,* 45, 947-957. doi: 10.1016/j.jemermed.2013.05.029

14. Laroche HH, Wallace RD, Snetselaar L, Hillis SL, Cai X, Steffen LM (2013). Weight gain among men and women who have a child enter their home. *J Acad Nutr Diet.* Advance online publication. doi: 10.1016/j.jand.2013.05.022

15. Katz DA, Holman J, Johnson S, Hillis SL, Ono S, Stewart K, Paez M, Fu S, Grant KM, Buchanan L, Prochazka A, Battaglia C, Titler M, Vander Weg M (2013). Implementing smoking cessation guidelines for hospitalized veterans: Effects on nurse attitudes and performance. *J Gen Intern Med.* Advance online publication. doi: 10.1007/s11606-013-2464-7

16. Brandt D, Shinkunas L, **Hillis** SL, Daack-Hirsch SE, Driessnack M, Downing NR, Liu MF, Shah LL, Williams JK, Simon CM (2013). A closer look at the recommended criteria for disclosing genetic results: Perspectives of medical genetic specialists,

genomic researchers, and institutional review board chairs. *J Genet Couns*, 22, 544-553.

17. Tochigi, Y; Zhang, P; Rudert, MJ; Baer, TE; Martin, JA; **Hillis**, SL; Brown, TD (2013). A novel impaction technique for modeling intra-articular fracture in large animal joints. *Osteoarthritis Cartilage* 1, 200-208 doi: 10.1016/j.joca.2012.10.004

18. Gardner SE, **Hillis** SL, Heilman K, Segre JA, Grice EA (2013). The neuropathic diabetic foot ulcer microbiome is associated with clinical factors, *Diabetes.Journal*, 62, 923-30.

19. Katz DA, Holman J, Nugent A, Baker L, Johnson S, **Hillis** SL, Tinkelman D, Titler M, Vander Weg MW (2013). The Emergency Department Action in Smoking Cessation (EDASC) Trial: Impact on cessation outcomes. *Nicotine Tob Res* 15,1032-1043.

20. Wakefield BJ, Holman JE, Ray A, Scherubel M, Adams MR, Hills SL, Rosenthal GE (2012). Outcomes of a Home Telehealth Intervention for Patients with Diabetes and Hypertension. *Telemedicine and e-Health* 18:575-579

21. Gardner, SE, Frantz RA, , **Hillis** SL, Blodgett TJ, Femino LM, Lehman SM (2012). Volume measures using a digital image analysis system are reliable in diabetic foot ulcers, *Wounds* 24, 146-151.

22. Laroche HH, Wallace RB Snetselarr RD, Hillis SL, Steffen LM (2012). Changes in Diet Behavior when Adults become Parents. *Journal of the Academy of Nutrition and Dietetics* 112, 832-838.

23. Saltzman CL**, Hillis** SL, Stolley MP, Anderson D, Amendola A (2012). Motion versus fixed distraction of the joint in the treatment of ankle osteoarthritis: a prospective randomized controlled trial, *Journal of Bone and Joint Surgery* 94A, 961-970..

24. Katz D, Vander Weg M, Holman J, Nugent A, Baker L, Johnson S, **Hillis** S, Titler M (2012). The emergency department action in smoking cessation (EDASC) trial: Impact on delivery of smoking cessation counseling, *Acad Emerg Med* 19, 409-420.

25. Gardner SE, **Hillis** SL, Frantz RA (2011). A prospective study of the PUSH tool in diabetic foot ulcers, *Journal of Wound, Ostomy and Continence Nursing* 38, 385-393.

26. Tochigi Y, Vaseenon T, Heiner AD, Fredericks DC, Martin JA, Rudert MJ, **Hillis** SL, Brown TD, McKinley TO (2011). Instability dependency of OA development in a rabbit model of graded ACL transection, *Journal of Bone & Joint Surgery*, 93, 640-647

27. Wakefield BJ, Homan JE, Ray A, Scheruble M, Adams M, **Hillis** SL, Rosenthal GE (2011) Effectiveness of home telehealth in co-morbid diabetes and hypertension: a randomized controlled trial, *Telemedicine & e-health*, 17, 254-261.

28. Tochigi Y, Buckwalter JA, Martin JA, **Hillis** SL, Zhang P, Vaseenon T, Lehman AD, Brown TD (2011) Distribution and progression of chondrocyte damage in a whole-organ

model of human intra-articular fracture, *Journal of Bone & Joint Surgery*, 93A, 533-539.

29. Vaseenon T, Tochigi Y, Heiner AD, Goetz JE, Baer TE, Fredericks DC, Martin JA, Rudert MJ, **Hillis** SL, Brown TD, McKinley TO (2011). Organ-level histological and biomechanical responses from localized incongruity in the rabbit knee, *Journal of Orthopedic Research* 29, 340-346.

30. Simon C, Schramm S, **Hillis** S (2010) Patient internet use surrounding cancer clinical trials: Clinician perceptions and responses, *Contemporary Clinical Trials,* 31, 229-234

31. Thomas TP, Anderson DD, Mosqueda TV, Van Hofwegen CJ, **Hillis** SL, Marsh JL, Brown TD (2010) Objective CT-based metrics of articular fracture severity to assess risk for post-traumatic osteoarthritis, *The Journal of Orthopaedic Trauma*, 24, 764-9

32. Christensen AJ, Howren MB, **Hillis** SL, Kaboli PJ, Carter BL, Cvengros JA, Wallston KA, Rosenthal GE (2010) Patient and physician beliefs about control over health: association of symmetrical beliefs with medication regimen adherence, *Journal of General Internal Medicine* 25, 397-402.

33. Cvengos JA, Christensen AJ, Cunningham C, **Hillis** SL, Kaboli PJ (2009) Patient preferences for and reports of provider behavior: impact of symmetry on patient outcomes, *Health Psychology*, 28, 660-667.

34. Nepple K G, Wahls T L, **Hillis** S L, Joudi F N (2009) Gleason score and laterality concordance between prostate biopsy and prostatectomy specimens, *International Brazilian Journal of Urology* 35, 559-64.

35. Katz D A, Graber M, Birrer EK, Lounsbury P, Baldwin A, **Hillis** SL, Christensen A C *(*2009) Health beliefs toward cardiovascular risk reduction in patients admitted to chest pain observation units, *Academic Emergency Medicine*, 16, 379-387.

36. Moussavi-Harami S F, Pedersen D R, Martin J A, **Hillis** S L, Brown T D (2009) Automated objective scoring of histologically apparent cartilage degeneration using a custom image analysis program, *Journal of Orthopedic Research*, 27, 522-528.

37. Gardner S E, Hillis S L, Frantz R A, Park H, Scherubel M (2009) Clinical signs of infection in diabetic foot ulcers with high microbial load, *Biological Research for Nursing*, 11, 119-128.

38. Forman-Hoffman VL, Richardson KK, Yankey JW, **Hillis** SL, Wallace RB, Wolinsky FD (2008) Retirement and weight changes among men and women in the Health and Retirement Study, *Journal of Gerentology: Social Sciences*, 63B, S146-S153.

39. Nepple KG, Joudi FN, Hillis SL, Walhs TL (2008) The prevalence of delayed clinician response to elevated prostate-specific antigen values, *Mayo Clinic Proceedings,* 83, 439-

445.

40. Forman-Hoffman VL, Richardson KK, Yankey JW, Hillis SL, Wallace RB, Wolinsky FD (2008) Impact of functional limitations and medical comorbidity on subsequent weight changes and increased depressive symptoms in older adults, *Journal of Aging and Health*, 20, 367-384.

41. Katz DA, Aufderheide TP, Bogner M, Rahko PS, **Hillis** SL, Selker HP (2008) Do emergency department patients with possible acute coronary syndrome have better outcomes when admitted to cardiology?, *Annals of Emergency Medicine*, 51, 561-570.

42. Gardner SE, **Hillis** SL, Park H (2007) Diagnostic validity of semi-quantitative swab cultures, *Wounds*, 19, 31-38.

43. Cvengros JA, Christensen AJ, **Hillis** SL, Rosenthal GE (2007) Patient and physician attitudes in the healthcare context: attitudinal symmetry predicts patient satisfaction and adherence, *Annals of Behavioral Medicine*, 33, 262-268.

44. Katz DA, Jarrard DF, McHorney CA, **Hillis**, SL, Wiebe, DA, Fryback, DG. (2007) Health perceptions in patients who undergo screening and workup for prostate cancer, *Urology*, 69, 215-220.

45. Foreman-Hoffman VL, Yankey JW, **Hillis** SL, Wallace RB, Wolinsky FD (2007) Weight and depressive symptoms in older adults: direction of influence, *Journal of Gerontology: Social Sciences*, 62B, S43-S51.

46. Gardner SE, Frantz RA, Saltzman CL, **Hillis** SL, Park H, Scherubel M (2006) Diagnostic validity of three quantitative swab techniques for identifying chronic wound infection, *Wound Repair and Regeneration*, 14, 548-557 DOI:10.1111/j.1743-6109.2006.00162.x.

47. Kaldjian LC, Jones EW, Rosenthal GE, Tripp-Reimer T, **Hillis** SL (2006) An empirically derived taxonomy of factors affecting physicians' willingness to disclose medical errors, *Journal of General Internal Medicine*, 21:942-948.

48. Noyes R, Jr., Carney CP, **Hillis** SL, Jones LE, Langbehn DR (2005). Prevalence and risk factors for illness worry in the general population, *Psychosomatics*, 46:529-539 DOI:10.1176/appi.psy.46.6.529.

49. Saltzman C, Rashid R, Hayes A, Fitzpatrick D, Klapach A, Fellner C, **Hillis** SL (2004). 4.5-gram monofilament sensation beneath both first metatarsal heads indicates protective foot sensation in diabetic patients, *Journal of Bone and Joint Surgery,* 86A, 717-723.

50. Zickmund S, **Hillis** S L, Barnett M J, Ippolito L, LaBrecque D R (2004). 'He Told me I would Die and I should just Go Away': hepatitis C patients report communication problems. *Hepatology*, 39, 999-1007.

51. Cram P, **Hillis** SL, Barnett M, Rosenthal GE (2004). The impact of weekend admission and hospital teaching status on in-hospital mortality, *Am J Med*, 117, 151-157.

52. Tochigi Y, Amendola A, Rudert MJ, Baer TE, Brown TD, **Hillis** SL, Saltzman CL (2004). Direction of subtalar joint laxity with interosseous, talocalcaneal ligament sectioning, *Foot and Ankle International*, 25, 588-596.

53. Levy S M, Warren JJ, Broffitt B, **Hillis** SL, Kanellis MJ (2003). Fluoride, beverages, and dental caries in the primary dentition, *Caries Research*, 37, 157-165.

54. Niehaus AC, Heard SB, Hendrix S D, **Hillis** SL (2003). Measuring edge effects on nest predation in forest fragments: do finch and quail eggs tell different stories? *American Midland Naturalist*, 149, 335-343.

55. Tonioli MB, Bouschlicher, and **Hillis** SL(2002). MR. Laser fluorescence detection of occlusal caries, *American Journal of Dentistry*, 15(3), 268-273.

56. Levy SM, **Hillis** SL, Warren JJ, Broffitt BA, Islam AKMM., Wefel JS, Kanellis MJ (2002). Primary tooth fluorosis and fluoride intake during the first year of life, *Community Dentistry Oral Epidemiology*, 30, 286-95.

57. Thomas G, Goldberg JH, Cannon D, and **Hillis** SL (2002). Surface textures improve the robustness of stereoscopic depth cues. *Journal of the Human Factors and Ergonomics Society*, 44, 157-170.

58. Catney MR, **Hillis** SL, Wakefield B, Simpson L, Domino L, Keller S, Connelly T, White M, Price D, Wagner K (2001). Relationship between the incidence of phlebitis/infiltratin rates and the frequency of changing peripheral intravenous (IV) catheters. *Journal of Infusion Nursing*, 24, 332-341.

59. Lutgendorf SK, Tripp-Reimer T, Harvey J, Marks G, Hong S-Y, **Hillis** SL, & Lubaroff D (2001). Effects of housing relocation on immunocompetence and psychosocial functioning in older adults. *Journals of Gerontology: Medical Sciences*, 56A, M97-M105

60. Davies KR, Schneider GB, Southard TE, **Hillis** SL, Wertz PW, and Finkelstein M (2001). Deciduous canine and permanent lateral incisor differential root resorption. *American Journal of Orthodontics and Dentofacial Orthopedics*, 120:339-347.

61. Southard TE, Southard KA, Krizan KE, **Hillis** SL, Haller JW, Keller J, and Vannier MW (2000). Mandibular bone density and fractal dimension in rabbits with induced osteoporosis, *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*, 89:244-9.

62. Haselton DR, Diaz-Arnold AM, and **Hillis** SL(2000). Clinical assessment of high-strength, all-ceramic crowns, *Journal of Prosthetic Dentistry*, 83, 396-401.

63. Herron RE & **Hillis** SL (2000). The impact of the Transcendental Meditation program on government payments to physicians in quebec: An Update, *Science of Health Promotion*, 14, 284-291.

64. Pedersen DR, Brown T D, **Hillis** S L, Callaghan J J (1998). Prediction of long-term polyethylene wear in total hip arthroplasty, based on early wear measurements made using digital image analysis, *Journal of Orthopaedic Research*, 16, 557-563.

65. Leslie L R, Southard T E, Casko J S, Southard K A, Jakobsen J R, Tolley E A, **Hillis** S L, Carolan C, Logue M W (1998). Prediction of mandibular growth rotation: assessment of the Skieller, Bjork, and Linde-Hansen method, *American Journal of Orthodontics and Dentofacial Orthopedics*, 114, 659-67.

66. Suls J, Green P, **Hillis** S L (1998). Emotional reactivity to everyday problems, affective inertia, and neuroticism, *Personality and Social Psychology Bulletin*, **24**, 127-136.

67. Keenan G M, Cooke R, **Hillis** S L (1998). Norms and nurse management of conflicts: keys to understanding nurse-physician collaboration, *Research in Nursing and in Health*, **21**, 59-72.

68. Shaver S M, Brown T D, **Hillis** S L, Callaghan J J (1997). Digital edge detection measurement of polyethlyne wear in total hip arthroplasty, *The Journal of Bone and Joint Surgery*, **79-A**, 690-700.

69. MacLean C R K, Walton K G, Wenneberg S R, Levitsky D K, Mandarino J V, Waziri R, **Hillis** S L, Schneider R H (1997). Effects of the Transcendental Mediation program on adaptive mechanisms: changes in hormone levels and responses to stress after four months of practice, *Psychoneuroendocrinology*, **22**, 277-295.

70. Southard T E, Southard K A, Jakobsen J R, **Hillis** S L, Najim C A (1996). Fractal dimension in radiographic analysis of alveolar process bone, *Oral Surgery, Oral Medicine, Oral Pathology, and Oral Radiology*, **82**, 569-576.

71. Herron R E, **Hillis** S L, Mandarino J V, Orme-Johnson D W, Walton K G (1996). The impact of the Transcendental Meditation Program on government payments to physicians in Quebec, *American Journal of Health Promotion*, **10**, 208-216.

72. Haaga D A F, Davison GC, McDermut W, **Hillis** S L, Twomey H B (1993). "State of mind" analysis of the articulated thoughts of ex-smokers, *Cognitive Therapy and Research*, **17**, 427-439.

73. Furst D E, Clements P J, Lachenbruch P A, **Hillis** S L, Miller B L, Sterz G, Paulus H E (1989). Immunosuppression with chlorambucil versus placebo for scleroderma, *Arthritis and Rheumatism*, **32**, 584-593.

Book Chapters

1. **Hillis**, S L (2018) Multireader ROC Analysis, chapter in *The Handbook of Medical Image Perception and Techniques*, *Second Edition*, ed. by Samei, E. and Krupinski, E. Cambridge: Cambridge University Press.

2. **Hillis**, S L (2010) Multireader ROC Analysis, chapter in *The Handbook of Medical Image Perception and Techniques*, ed. by Samei, E. and Krupinski, E. Cambridge: Cambridge University Press.

3. **Hillis**, S L & Woolson, R F (2002). An Analysis of Categorized Data: Use of the Odds Ratio as a Measure of Association, chapter in *Textbook of Psychiatric Epidemiology*, *Second Edition,* ed. by Tsuang, M, and , Tohen, M, 35-64. New York: Wiley-Liss, Inc.

4. **Hillis**, S L & Woolson, R F (1995). An Analysis of Categorized Data: Use of the Odds Ratio as a Measure of Association, in *Textbook of Psychiatric Epidemiology*, ed. by Tsuang, M, Tohen, M, & Zahner, G, 55-80. New York: Wiley.

Software
1. Schartz KM & Hillis SL. *Multi-reader sample size program for diagnostic studies* (computer software). Available for download from http://perception.lab.uiowa.edu

2. Hillis SL, Schartz KM, Pesce LL, Berbaum KS, and Metz CE. *DBM MRMC procedure for SAS* (computer software). Available for download from http://perception.radiology.uiowa.edu

3. Schartz KM, Hillis SL, Pesce LL, and Berbaum KS. *OR-DBM MRMC 3.4* (computer software). Available for download from http://perception.lab.uiowa.edu

Proceedings
1. Stephen L. Hillis, Determining Roe and Metz model parameters for simulating multireader multicase confidence-of-disease rating data based on read-data or conjectured Obuchowski-Rockette parameter estimates, Proc. SPIE 11316, Medical Imaging 2020: Image Perception, Observer Performance, and Technology Assessment, 113160N (17 March 2020); https://doi.org/10.1117/12.2550541.

2. Smith, B.J. and S.L. **Hillis**, Multi-reader multi-case analysis of variance software for diagnostic performance comparison of imaging modalities. Proceedings of SPIE--the International Society for Optical Engineering, 2020. **11316**: p. 113160K.

3. **Hillis** SL, Mohammad BA, Brennan PC. Estimating latent reader-performance variability using the Obuchowski-Rockette method. Proceedings Volume 10952, Medical Imaging 2019: Image Perception, Observer Performance, and Technology Assessment; 109520F (2019) https://doi.org/10.1117/12.2513106.

4. Mohammad BA, **Hillis** SL, Reed W, Saade C, Brennan PC. (2019*). Comparing senior residents performance to radiologists in lung cancer detection*. Proceedings Volume 10952, Medical Imaging 2019: Image Perception, Observer Performance, and Technology Assessment; 109520Y (2019). https://doi.org/10.1117/12.2512755

5. Soh BP, Lee WB, Wong J, Sim L, **Hillis** SL, Tapia KA, Brennan PC. Varying performance in mammographic interpretation across two countries: Do results indicate reader or population variances?, Proc. SPIE 9787, Medical Imaging 2016: Image Perception, Observer Performance, and Technology Assessment. 2016 March 24;9787:97870X-97870X-6. doi: 10.1117/12.2217654.

6. **Hillis** SL, Schartz KM. Demonstration of multi- and single-reader sample size program for diagnostic studies software, Proc. SPIE, Medical Imaging 2015: Image Perception, Observer Performance, and Technology Assessment. 2015 March 17;9416:94160E. doi: 10.1117/12.2083150.

Recent Presentations

1. **Hillis** SL. Determining Roe and Metz model parameters for simulation MRMC data based on real-data or conjectured parameter estimates. SPIE Medical Imaging conference, Houston, February 20, 2020.

2. **Hillis** SL. "Statistical Methods for Analyzing Diagnostic Radiologic Studies." Half-day invited workshop at Peking University, Peking, China, November 12, 2020. (Invited workshop)

3. **Hillis** SL. Relationship between Obuchowski-Rockette and Gallas U-statistic methods for analyzing multi-reader diagnostic imaging data. The Second Beijing symposium in Biostatistics and Data Science, Peking, China, November 10, 2019. (Invited talk)

4. **Hillis.** Methodology for Analysis of Multi-Reader Diagnostic Imaging Data. Invited seminar, University of Iowa Biostatistics Dept., September 9, 2019.

5. **Hillis** SL. Relationship between Obuchowski-Rockette and Gallas U-statistic methods for analyzing multi-reader diagnostic imaging data. Joint Statistical Meetings, Denver, July 29, 2019. (Invited talk)

6. **Hillis** SL. "Statistical Methods for Analyzing Diagnostic Radiologic Studies." Half-day invited workshop at Medical Imaging Perception Society (MIPS), Salt Lake City, July 15, 2019. (invited workshop)

7. **Hillis** SL. Relationship between Obuchowski-Rockette and Gallas U-statistic methods for analyzing multi-reader diagnostic imaging data. Medical Imaging Perception Society (MIPS), Salt Lake City, July 15, 2019

8. **Hillis** SL, Al Mohammad B and Brennan PC. Estimation of latent reader-performance variability using the Obuchowski-Rockette method. SPIE Medical Imaging Conference, San Diego, February 20, 2018.

9. **Hillis** SL. Demonstration of software for analyzing multi-reader diagnostic imaging studies. Two-hour demonstration as part of the "Live Demonstrations" workshop special event, SPIE Medical Imaging Conference, San Diego, February 19, 2018.

10. **Hillis** SL. What aspect of reader performance are we interested in? Medical Imaging Perception Society (MIPS), Houston, July 13, 2017.

11. **Hillis** SL, Nishikawa, R and Samuelson, F. "ROC Analysis and Observer Studies to Evaluate Imaging Technology." Day-long workshop at SPIE Medical Imaging conference, Orlando, February 11, 2017.

12. **Hillis** SL. What aspect of reader performance are we interested in? Center for Devices and Radiological Health (CDRH), Federal Food and Drug Administration (FDA), Silver Spring, MD, invited lecture March 16, 2017.

13. **Hillis** SL. Relationship between Roe and Metz simulation model for multireader diagnostic data and Obuchowski-Rockette model parameters. ENAR 2017 Spring Meeting, Washington, DC, March 15, 2017.

14. **Hillis** SL, Nishikawa, R and Samuelson, F. "ROC Analysis and Observer Studies to Evaluate Imaging Technology." Day-long workshop at SPIE Medical Imaging conference, San Diego, February 27, 2016.

15. Soh BP, Lee WB, Wong J, Sim L, **Hillis** SL, Tapia KA, Brennan PC. (2016). Varying performance in mammographic interpretation across two countries: Do results indicate reader or population variances? Medical Imaging 2016: Image Perception, Observer Performance, and Technology Assessment, San Diego, February 27, 2016.

16. **Hillis** SL. Interpretation of Multireader multicase (MRMC) analysis parameters, with applications to simulation models and sample size estimation. Joint Statistical Meetings, Seattle, August 8-13, 2015.

17. **Hillis** SL. Interpretation of multireader multicase analysis parameters, with applications to simulation models and sample size estimation. Medical Image Perception Conference XVI, Ghent, Gelgium, June 3, 2015.

18. **Hillis** SL, Schartz, KM. Demonstration of multi- and single-reader sample size program for diagnostic studies software. SPIE Medical Imaging conference, Orlando, BL, San Diego, February 21, 2015

19. **Hillis** SL, Nishikawa R and Samuelson F. "ROC Analysis and Observer Studies to Evaluate Imaging Technology." Day-long workshop at SPIE Medical Imaging

conference, Orlando, FL, San Diego, February 21, 2015.

20. **Hillis** SL. Analysis of multi-reader-performance outcome data. Center for Devices and Radiological Health (CDRH), Federal Food and Drug Administration (FDA), Silver Spring, MD, invited lecture March 20, 2014.

21. **Hillis** SL. A Simplifying Reformulation of the Binormal Likelihood-Ratio Model. ENAR 2014 Spring Meeting, Baltimore, MD, March 16-19, 2014.

22. **Hillis** SL, Nishikawa R and Samuelson F. "ROC Analysis and Observer Studies to Evaluate Imaging Technology." Day-long workshop at SPIE Medical Imaging conference, San Diego, February 15, 2014.

23. **Hillis** SL. A simplifying reformulation of the likelihood-ratio binormal distribution. Presented as part of the invited session "Techology Assessment for informed Medical Decisionmaking: In Memory of Professor Charles E. Metz," 10th Internation Conference on Health Policy Statistics, Chicago, Il, October 9-11, 2013.

24. **Hillis** SL. A simplifying characterization of the binormal likelihood-ratio distribution. Medical Image Perception Conference XV, Washington, DC, August 14-16, 2013.

25. **Hillis** SL. A tribute to Charlie Metz and an assessment of the state of the art: a statistician's perspective. Presented as part of the invited workshop "Image Perception, Observer Performance, and Technology Assessment", SPIE Medical Imaging Conference, Orlando, FL, February 7, 2013.

26. **Hillis**, SL. ANOVA Models for Nontraditional Multi-Reader Imaging Studies. Presented as part of the invited session "Advances in the Design and Analysis of Multi-reader Diagnostic Imaging Evaluation," San Diego, CA, Joint Statistical Meetings, July 28 – August 2, 2012.

27. **Hillis**, SL Analysis of Multi-Reader Diagnostic Imaging Data – the Marginal ANOVA Model Approach. Silver Spring, MD, Center for Devices and Radiological Health (CDRH), Federal Food and Drug Administration (FDA), April 5, 2012.

28. **Hillis,** S.L. Analysis of Multi-Reader Diagnostic Imaging Data. Department of Biostatistics, University of Iowa, September 12, 2011.

29. **Hillis,** S.L. Obuchowski-Rockette vs. Dorfman-Berbaum-Metz Reporting of Multi-Reader ROC, ROI, and FROC Analyses. Dublin, Ireland, Medical Image Perception Conference XIV, August 9-12, 2011.

30. **Hillis**, S.L., Extending the Obuchowski-Rockette/Dorfman-Berbaum-Metz multireader ROC analysis method to other study designs. Seattle, WA, International Biometric Society WNAR Annual Meeting, June 20-23, 2010.

31. **Hillis**, S.L, Berbaum, K.S. Using the mean-to-digma ratio as a measure of the improperness of binormal ROC curves. New Orleans, LA, International Biometric Society ENAR Spring Meeting, March 21-24, 2010.

32. **Hillis**, S.L, Berbaum, K.S. Using the mean-to-sigma ratio to detect unacceptably improper ROC curves. Santa Barbara, CA, Medical Image Perception Conference XIII, October 19-21, 2009.

33. **Hillis**, S.L, Berbaum, K.S. Using the mean-to-sigma ratio to detect unacceptably improper ROC curves. Portland, OR, International Biometric Society WNAR Meeting, June 14-17, 2009.

34. **Hillis**, S.L. Reexamination and further development of the Roe and Metz simulation model for multiple reader ROC decision data. San Antonio, TX, International Biometric Society ENAR Spring Meeting, March 15-18, 2009.

35. **Hillis**, S.L. Using marginal ANOVA models to motivate, generalize, and derive properties for the Obuchowski-Rockette (OR) procedure for multireader ROC data analysis. Denver, CO, Joint Statistical Meetings, August 3-7, 2008.

36. **Hillis**, S.L. Using marginal ANOVA models to motivate, generalize, and derive properties for the Obuchowski-Rockette (OR) procedure for multireader ROC data analysis. Crystal City, VA, International Biometric Society ENAR Spring Meeting, March 16-19, 2008.

37. **Hillis**, S.L. Using marginal ANOVA models to motivate, generalize, and derive properties for the Obuchowski-Rockette (OR) procedure for multireader ROC data analysis. Iowa City, IA, Medical Image Perception Conference, October 17-20, 2007.

38. **Hillis**, S.L, Berbaum K.S. Recent Developments in the Dorfman-Berbaum-Metz (DBM) Procedure for Multireader ROC study analysis. Montreal, Canada, XXIII International Biometric Conference, July 16-21, 2006.

39. **Hillis**, S.L, Berbaum K.S. Recent Developments in the Dorfman-Berbaum-Metz (DBM) Procedure for Multireader ROC study analysis. Tampa, FL, TX, International Biometric Society ENAR Spring Meeting, March 26-29, 2006.

40. **Hillis**, S.L, Berbaum K.S. Recent Developments in the Dorfman-Berbaum-Metz (DBM) Procedure for Multireader ROC study analysis. Windermere, UK, Medical Image Perception Conference XI, September 27-30, 2005.

41. **Hillis**, S.L Resolving the degrees of freedom issue concerning the Dorfman-Berbaum-Metz and Obuchowski-Rockette methods for receiver operating characteristic (ROC) data. Houston, TX, International Biometric Society ENAR Spring Meeting, March 20-23, 2005.

Dissertation Supervision

Supervised Nihaya Awartani's dissertation, completed in 1991 for the Mathematics and Statistics Department, The American University, Washington, D.C. Dr. Awartani presently is an assistant professor in the Department of Mathematics, An-Najah University, Nablus, West Bank.

Research Support:

Ongoing Research Support
1 R01 EB025174 Hillis (PI)
NIH/NIBIB   09/01/2018 – 05/31/2022
Generalized Obuchowski-Rockette Methodology for Analysis of Radiologic Diagnostic Imaging Studies
The long-term goal of this project is to develop statistical methodology and software appropriate for diagnostic radiological imaging studies that accounts for both patient and reader variability. The objective of this application is to further develop Obuchowski-Rockette (OR) methodology and software in a way that allows for many more types of analyses and study designs by pursuing the following four specific aims: (1) Develop a generalized OR methodology that accommodates the same types of designs and analysis models that can currently be used with conventional analysis-of-variance (ANOVA) and linear regression methodology. (2) Provide illustrative examples showing how the generalized OR methodology can be applied to situations where the present OR methodology is not applicable. These include unbalanced designs, regression analyses, multivariate analyses, ANCOVA analyses, partially-paired-reader data, and missing-cases data. (3) Empirically validate the OR methodology for each example in Aim 2 through simulations. (4) Develop R, MATLAB and SAS software code for implementing the generalized OR methodology.

R01NR015642 Gardner (PI)   06/01/2015 – 03/01/2020
NIH/NINR
Severe pain during wound care procedures: Model and mechanisms
The aim of this study is to develop a clinical model to predict patients likely to experience severe pain during dressing changes of open wounds and to identify biological mechanisms underlying severe pain during dressing changes.
Role: Co-Investigator

Completed Research
1 R01 EB019967 Schartz (PI)   04/15/2015 – 03/31/2018
NIH/NIBIB
Modern ROC Software for Multi- and Single-Reader Diagnostic Imaging Studies
The goals of this project are to create a cross-platform OR-DBM-MRMC package by rewriting the majority of the components in the current software in Java, and to enhance the software by providing several new features
Role: Co-Investigator

1 R01 EB013667-01A1 Hillis (PI)   04/01/2012 – 03/31/2016

NIH/NIBIB
Power and Sample-Size Methodology for Radiology Research
The long-term goal of this project is to provide a thorough statistical methodology appropriate for diagnostic radiological imaging research that accounts for both patient and reader variability. The objective of this application is to improve the power and sample size (P&SS) aspect of this methodology by pursuing the following four specific aims: (1) Develop a realistic and interpretable model for generating ROC decision data for evaluating the power and sample size methodology that emulates data from clinical studies. (2) Validate a new approach to power and sample-size calculation, 'confidence-level P&SS,' that takes into account unreliable pilot-study variance estimates. (3) Extend the methodology to include other designs. (4) Develop user-friendly, free stand-alone software for implementing the methodology.

DHI 08-051 Bradley (PI)   5/1/09- 10/31/12
VA/HSR&
Urogenital Symptoms, Depression and PTSD in OEF/OIF Women Veterans
A longitudinal, epidemiologic study of Operation Enduring Freedom/Operation Iraqi Freedom women veterans to define the prevalence and natural history of urogenital symptoms and their association with depression and post-traumatic stress disorder symptoms, sexual assault history and deployment factors.
Role: Biostatistician

CDA 10-016 Abrams (PI)   02/01/2011-01/31/2016
VA HSR&D
Treatment Variations and Treatment Effectiveness in Veterans with Post Traumatic Stress Disorder Study
1 will examine the positive and negative/e predictive values, relative to data from, patients' medical records, of three alternative approaches to identify patients with PTSD using inpatient and outpatient administrative data. Study 2 will provide the most comprehensive description, to date, of national treatment -patterns of veterans with newly diagnosed PTSD during the first 12 months after diagnosis. Study 3 will identify first identify potentially important patient and organizational factors that are associated with the use of guideline concordant therapy.
Role: Biostatistician and mentor

IIR 07-113 (Katz)   5/1/08-06/30/11
VA HSR&D
Improving the Delivery of Smoking Cessation Guidelines in Hospitalized Veterans
The primary aim for this study is to determine the effectiveness of a nurse-initiated intervention, which couples low intensity inpatient counseling with sustained proactive telephone counseling, on cessation rates at 6 and 12 months after hospital discharge, compared to usual care. As the proposed implementation trial aims to increase quit rates by facilitating nurses' adoption and delivery of recommended cessation services, co-primary aims are 1) to determine whether the intervention improves the prescription of recommended pharmacotherapy for smoking cessation, and 2) to determine whether the intervention improves the referral of patients to telephone counseling (or other outpatient cessation counseling).

1 R01 NR009448 Gardner (PI)   08/01/2007 – 01/31/2012
NIH/NINR
Bioburden Predictors of Diabetic Ulcer Complications
The major goals of the project are to 1) determine the prognostic efficacy of a) high microbial load, b) microbial diversity, and c) *Staphylococcus aureus* and anaerobes based on swab cultures obtained using Levine's technique in prediciting infection-realted compliations among diabetic foot ulcers without signs of clinical infection; and 2) determine the extent to which combining microbiological dimensions will improve the predictive ability above any single dimension.
Role: Biostatistician (10%)

R01 EB000863 Berbaum (PI)   04/01/2007-03/31/2012
NIH/NIBIB
Improved DBM ROC Methods for Diagnostic Radiology
The goal is to extend the range of application and improve the effectiveness of the Dorfman-Berbaum-Metz method for analyzing multireader ROC data
Role: Statistician (40%)

1P50 AR055533-01 Buckwalter (PI)   09/30/2007 – 09/29/2012
NIH/NIAMS
New Approaches to Assess and Forestall Osteoarthritis in Injured Joints
The goal is to develop new methods of forestalling post-traumatic osteoarthritis (PTOA) through a multi-disciplinary translational approach including basic science, bioengineering, imaging, and clinical research. The central theme is that joint injuries initiate a sequence of biologic events that lead to PTOA and that new treatments of joint injuries will minimize these deleterious events and promote joint healing.
Role: Biostatistician

1 RC1 HG005786-01 Williams & Simon (PIs)
NIH/ Trans-NIH Recovery Act Research Support   9/30/2009-7/31/2011
Managing genomic incidental findings in the genome era
This research study will be among the first to explore the prospect and discovery of incidental findings in Genome Wide Association Studies and Chromosomal Microarray Analysis; to generate a taxonomy with the potential to support decision making related to the prospect and discovery of genomic incidental findings; and to identify opportunities for future research and dialogue in this important area of ethical concern.
Role: Biostatistician

IIR 04-201 (Christensen)   07/01/2007-12/31/2010
VA HSR&D
Patient & Provider Attitudes in the Healthare Context
The general object is to assess patient and provider attitudes toward care and to examine the degree to which similarity of attitudes held by VA patients being treated for comorbid hypertension and diabetes and by their primary care providers. Is a determinant of patient satisfaction, patient regimen adherence and adequacy of diabetic and blood pressure control.

Role: Biostatistician

Scientist Development Grant Popescu (PI)   7/01/08-06/30/10
AHA-Midwest Affiliate
Optimizing Methods for the Measurement of Hospital Quality of Care for Myocardial Infarction
The primary goal is to evaluate the improvements in risk adjustment model performance for
assessing hospital-level AMI mortality that are achievable by combining data from computerized
clinical databases to purely administrative data.
Role: Consultant

IIR 07-151 Sarrazin (PI)   1/2008-12/2009
VA HSR&D
The Business Case for Reduction in Surgical Complication Rates in the VA
The research will be the most comprehensive and generalizable analysis to date within VHA of
the costs of surgical complications. In addition to providing system wide estimates, the research
will also provide estimates of the potential cost savings within individual VAMCs, which may
have different baseline complication rates and costs associated with specific complications. The
study will also establish a template for similar "business case" analyses that link existing VHA
data on quality and performance with data on the cost of care, measured by VHA's cost
accounting system.
Role: Biostatistician

IMV 04-066-1 (Kaboli)   01/2006 - 12/2008
VA HSR&D
Implementing Evidence Based Treatment of Hypertension
This grant is to study the efficacy of a patient-centered intervention to activate patients to engage
their providers in a discussion of anti-hypertensive therapy and to improve the use of thiazide
diuretics.
Role: Biostatistician

HPF 04-149 Rosenthal (PI)   07/2004-6/2009
VA HSR&D
Center for Research in the Implementation of Innovative Strategies in Practice (CRIISP)
This award will enhance the infrastructure for health service research at the Iowa City VA
Medical Center in the area of implementing evidence into practice.
Role: Biostatistician

R21 (Katz)   12/1/07-11/30/09
NIH/NIDA
The Effectiveness of Smoking Cessation Guidelines in the Emergency Department
The specific aims of this study are 1) to determine the feasibility of implementing a nurse-
initiated smoking cessation intervention in the ED and its impact on the delivery of brief
cessation counseling, and 2) to determine whether the intervention, which couples brief cessation
counseling in the ED with the delivery of proactive telephone counseling and free nicotine
replacement therapy by the Iowa Quitline, increases 6-month quit rates.
Role: Bioststistician

Katz (PI)   01/01/07-12/31/08
AHA Heartland Affiliate
Brief Intervention to Promote Cardiovascular Risk Reduction in Patient Admitted to Chest Pain
Observation Units.
The primary aims of the study are 1) to determine the effectiveness of a brief counseling
intervention in increasing chest pain observation unit patients' readiness to change cardiovascular
risk-related behaviors (diet, exercise, and smoking) and 2) to determine whether the study
intervention leads to changes in cardiovascular risk behaviors (diet, physical activity, and
smoking cessation).
Role: Biostatistician

1 P50 AR-48939-01 Buckwalter (PI)   09/16/2002 – 08/31/2007
NIH/NIAMS
Pathogenesis – Prevention of Post-Traumatic OA
A multidisciplinary group of experienced investigators in clinical, bioengineering, cell and
molecular biology research are working to advance understanding of the pathogenesis of post-
traumatic OA and to develop innovative approaches for preventing and treating this disease.
Role: Biostatistician

NRI-03-312 Wakefield (PI)   7/04 - 6/07
VA HSR&D
Effectiveness of Care Coordination in Managing Medically Complex Patients
This study seeks to evaluate the efficacy of a home telehealth intervention for veterans enrolled
in Primary Care Clinic with co-morbid diabetes and hypertension. Using a randomized
controlled design, 330 patients will be enrolled. Intervention patients will use a messaging
device to transmit clinical and health status data to a nurse case manager over 6 months. Nurses
will monitor patients and, if necessary, implement interventions according to a standard
protocol. Outcomes include HbA1c, blood pressure, quality of life, knowledge, self-efficacy,
and adherence to medication.
Role: Biostatistician

R01 EB000863 Berbaum (PI)   04/01/2003-03/31/2007
NIH/NIBIB
Improved DBM ROC Methods for Diagnostic Radiology
The overall goal of this grant is to improve DBM methodology by developing a modular
architecture that makes use of various forms of ROC analysis, including "proper" ROC models,
joint detection and localization analysis, and alternative free-response operating characteristic
analysis.
Role: Statistician

IIR-03-207-1 Vaughan Sarrazin (PI)   5/1/04 - 4/30/06
VA/HSR&D
Estimating the Magnitude of Unmeasured Risk in VA Patients
This two-year study will identify whether VA utilization is an independent risk factor for poor
outcomes. Specifically, the study will: 1) compare outcomes of VA users and other patients who

receive care in private sector hospitals for 10 high-volume medical and surgical diagnoses, adjusting for severity of illness; and 2) identify characteristics of VA users that are associated with poor outcomes and estimate the prognostic impact of these characteristics. The study will use Medicare administrative data, VA administrative data, and other existing data.
Role: Biostatistician

1 R03 AG026585-01 Hoffman (PI)   09/01/2005 - 08/31/2006
NIH/NIA
Weight, depression and functional status change pathways
This project examines the relationship between changes in depressive
symptoms and weight changes in a cohort of aging adults enrolled in the
Health and Retirement Study (HRS). The role of functional status as a
mediator or moderator of this relationship also will be assessed.
Role: Biostatistician

R01 CA-62362 Berbaum (PI)   7/1/1997-4/30/2003
NIH/NIBIB
New ROC Methodology for Evaluation of Diagnostic Systems
The broad, long-term objective of this project was to assess, perfect, and extend the useful range of application of the Dorfman/Berbaum/Metz multireader ROC methodology for the evaluation of accuracy of diagnostic imaging systems.
Role: Statistician

R01 DE09551 Levy (PI)   4/01/01 - 3/31/05
NIH
Longitudinal Study of Fluoride Exposures and Dental Fluorosis
The broad long-term objective of this study was to provide the scientific basis necessary to assure that fluorides can be used appropriately for maximum public health caries prevention with minimal dental fluorosis risk.
Role: Statistician