# **Brian J Smith**

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#### Education

2001	University of Iowa PhD, Biostatistics Advisor: M Kathryn Cowles, PhD	Iowa City, IA
1995	University of Texas MS, Mathematical Statistics	Austin, TX
1993	Saint Louis University BA, Mathematics; Minor, Computer Science	St. Louis, MO

# **Professional Experience**

#### Department of Biostatistics, University of Iowa

2017-Present Professor

2008-2017 Associate Professor 2002-2008 Assistant Professor

2001-2002 Visiting Assistant Professor

- Collaborate on multidisciplinary biomedical research with a focus on cancer.
- Disseminate research findings through scientific publications, software, and presentations.
- Secure extramural research grant funding.
- Teach two departmental courses per year, deliver seminars and short courses, advise MS and PhD theses, supervise graduate student preceptorships, and mentor undergraduates.
- Provide service to the department, college, university, and profession at local, national and international levels.

#### Biostatistics Core, Holden Comprehensive Cancer Center, University of Iowa

2006-Present Director 2005-2006 Co-Director 2001-Present Member

- Lead a group of faculty, staff, and students in providing biostatistical support for ~125 cancer center members from 4 HCCC research programs, 6 UI colleges, and 25 UI departments; for study protocol review and monitoring; and for clinical trial data safety and monitoring.
- Collaborate with cancer center members, trainees, and administration.
- Implemented online request and tracking systems for 100+ new Core research projects per year.

- Contributed to NCI cancer center support grant renewals in 2005, 2010, and 2015.
- Hire, supervise, and mentor Core staff and students.
- Report Core activities, productivity metrics, and utilization to cancer center leadership.

# Cancer Epidemiology and Population Science Program, Holden Comprehensive Cancer Center, University of Iowa

2016-Present Leadership Committee Member

2004-Present Program Member

- Full cancer center member with peer-reviewed cancer relevant grant funding and leadership role.
- Advise on the appointment of program members, allocation of funds, planning of activities and invited speakers, research opportunities, and strategic planning.

#### Biostatistics and Bioinformatics Core, Lymphoma SPORE, University of Iowa/Mayo Clinic

#### 2006-Present Co-Director

- Co-lead a group of PhD, Master's, and Bachelor's biostatisticians with colleagues at Mayo Clinic in
  providing biostatistical support to four main research projects, a developmental research program, a
  career enhancement program, and the two other programmatic cores.
- Collaborate with investigators across institutions on basic science, clinical trials, and epidemiological lymphoma research.
- Contributed to NCI SPORE grant renewals in 2006, 2011, and 2016.

#### Mormon Trek Village Condo Association, Iowa City, IA

2008-2009 Board of Directors President

- First home-owner president of the association.
- Oversaw care of the association's 230 units and \$260k annual income.
- Presided over open and closed board meetings and set their agendas.
- Assisted with cost projections, planning, and implementation of a \$770k reshingling project.
- Communicated board actions to and corresponded individually with homeowners.

#### Applied Research Laboratory, University of Texas

#### 1993-1995 Research Scientist

• Computer programming and data analysis support for the advanced sonar research group.

#### Research Interests

- Statistical Applications in Cancer Research, Public Health, and Biomedical Informatics
- Preclinical Studies and Clinical Trials, Epidemiologic Studies, Quantitative Medical Imaging,
   Radiomics, Diagnostic Testing, Disease Risk and Outcomes Modeling, Environmental Radon
- Bayesian Methods, Statistical Computing, MCMC, Spatial Statistics, Hierarchical Statistical Modeling, Statistical/Machine Learning

## **Computing Experience**

 Scientific Programming: BASIC, C/C++, Nvidia CUDA, FORTRAN, JAGS, Julia, Maple, MATLAB, Mathematica, OpenBUGS, Pascal, R, RStudio Shiny, SAS, STAN

- Scripting Languages: Bourne and C shell
- Data Management: Microsoft Access, OnCore, REDCap, SQL
- Markup Languages: HTML, LaTeX, Markdown
- Software Development: Git, SVN

#### **Peer-Reviewed Publications**

- 111. Buckakjian MR, Ginader T, Tasche KK, Pagedar NA, **Smith BJ**, Sperry SM (2018). Independent predictors of prognosis based on oral cavity squamous cell carcinoma surgical margins. *Otolaryngology Head and Neck Surgery*. PMID: 29737907 (*Accepted/In Press*)
- 110. **Smith BJ**, Beichel RR (2018). A Bayesian framework for performance assessment and comparison of imaging biomarker quantification methods. *Statistical Methods in Medical Research*. PMID: 29271301 (*Accepted/In Press*)
- 109. Andrew M, Yusung K, Ginader T, Smith BJ, Sun W, Wang D (2018). Reduction of applicator displacement in MR/CT-guided cervical cancer HDR brachytherapy by the use of patient hover transport system. *Journal of Contemporary Brachytherapy*, 10(1):85-90. PMC: PMC5881589, PMID: 29619060
- 108. Ulrich EJ, Sunderland JJ, **Smith BJ**, Mohiuddin I, Parkhurst J, Plichta KA, Buatti JM, Beichel RR (2018). Automated model-based quantitative analysis of phantoms with spherical inserts in FDG PET scans. *Medical Physics*, 45(1):258-276. PMID: 29091269
- 107. Monga V, U, Tanas M, Bossler A, Mott SL, **Smith BJ**, Milhem M (2018). A phase I/II study targeting angiogenesis using Bevacizumab combined with chemotherapy and a histone deacetylase Inhibitor (Valproic Acid) in advanced sarcomas. *Cancers (Basel)*, 10(2):53. PMID: 29462961
- 107. Kim Y, Patwardhan KA, Beichel RR, Smith BJ, Mart C, Plichta KA, Chang T, Sonka M, Graham MM, Magnotta V, Casavant T, Xia J, Buatti JM (2017). Development of a radiobiological evaluation tool to assess the expected clinical impacts of contouring accuracy between manual and semi-automated segmentation algorithms. 2017 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 3409-3412. PMID: 29060629
- 106. Kruspe S, Dickey DD, Urak KT, Blanco GN, Miller MJ, Clark KC, Burghardt E, Gutierrez WR, Phadke SD, Kamboj S, Ginader T, Smith BJ, Grimm SK, Schappet J, Ozer H, Thomas A, McNamara JO, Chang CH, Giangrande PH (2017). Rapid and Sensitive Detection of Breast Cancer Cells in Patient Blood with Nuclease-Activated Probe Technology. *Molecular Therapy Nucleic Acids*, 15(8):542-557. PMC: PMC5577414, PMID: 28918054
- 105. Schoenfeld JD, Sibenaller ZA, Mapuskar KA, Wagner BA, Cramer-Morales KL, Furqan M, Sandhu S, Carlisle TL, Smith MC, Abu Hejleh T, Berg DJ, Zhang J, Keech J, Parekh KR, Bhatia S, Monga V, Bodeker KL, Ahmann L, Vollstedt S, Brown H, Kauffman EP, Schall ME, Hohl RJ, Clamon GH, Greenlee JD, Howard MA, Shultz MK, **Smith BJ**, Riley DP, Domann FE, Cullen JJ, Buettner GR, Buatti

- JM, Spitz DR, Allen BG (2017). O2— and H2O2-mediated disruption of Fe metabolism causes the differential susceptibility of NSCLC and GBM cancer cells to pharmacological ascorbate. *Cancer Cell*, 31(4):487-500. PMID: 28366679
- 104. Beichel RR, **Smith BJ**, Bauer C, Ulrich EJ, Admadvand P, Budzevich MM, Gillies RJ, Goldgof D, Grkovski M, Mamarneh G, Huang Q, Kinahan PE, Laymon CM, Mountz JM, Muzi JP, Muzi M, Nehmeh S, Oborski MJ, Tan Y, Zhao B, Sunderland JJ, Buatti JM (2017). Multi-site quality and variability analysis of 3D FDG PET segmentations based on phantom and clinical image data. *Medical Physics*, 44(2):479-496. PMID: 28205306
- 103. Zahra A, Fath MA, Opat E, Mapuskar KA, Bhatia SK, Ma DC, Lii SN, Snyders TP, Chenard CA, Eichenberger-Gilmore JM, Bodeker KL, Ahmann L, Smith BJ, Vollstedt SA, Brown HA, Hejleh TA, Clamon GH, Berg DJ, Szweda LI, Spitz DR, Buatti JM, Allen BG (2017). Consuming a ketogenic diet while receiving radiation and chemotherapy for locally advanced lung cancer and pancreatic cancer: The University of Iowa experience of two phase 1 clinical trials. Radiation Research, 187(6):743-754. PMID: 28437190
- 102. Rogers LM, Mott SL, **Smith BJ**, Link BK, Sahin D, Weiner GJ (2016). Complement regulatory proteins CFHR1 and CFHR3 and patient response to anti-CD20 monoclonal antibody. *Clinical Cancer Research*, 23(4):954-961. PMID: 27528699
- 101. Gonzales Bosquet J, Newtson AM, Chung RK, Thiel KW, Ginader T, Goodheart MJ, Leslie KK, Smith BJ (2016). Prediction of chemo-response in serous ovarian cancer. *Molecular Cancer*, 15(1):66. PMC: PMC5070116, PMID: 27756408
- 100. McGuire SM, Bhatia SK, Sun W, Jacobson GM, Menda Y, Ponto LL, **Smith BJ**, Gross BA, Bayouth JE, Sunderland J, Graham M, Buatti JM (2016). Using [(18)F]Fluorothymidine (FLT) imaged with Positron Emission Tomography (PET) to quantify and reduce hematologic toxicity due to chemoradiation therapy for pelvic cancer patients. *International Journal of Radiation Oncology, Biology, Physics*, 96(1):228-239. PMC: PMC4982822, PMID: 27319286
- 99. Barnes KT, McDowell BD, Button A, **Smith BJ**, Lynch CF, Gupta A (2016). Obesity is associated with increased risk of invasive penile cancer. *BMC Urology*, 16(1):42. PMC: PMC4944270, PMID: 27411982
- 98. Beichel BR, Van Tol M, Ulrich EJ, Bauer C, Chang T, Plichta KA, **Smith BJ**, Sunderland JJ, Graham MM, Sonka M, Buatti JM (2016). Semiautomated segmentation of head and neck cancers in 18F-FDG PET scans: A just-enough-interaction approach. *Medical Physics*, 43(6):2948-2964. PMC: PMC4874930, PMID: 27277044
- 97. Dilger SK, Utoff J, Judisch A, Hammond E, Mott SL, **Smith BJ**, Newell JD, Hoffman EA, Sieren JC (2015). Improved pulmonary nodule classification utilizing quantitative lung parenchyma features. *Journal of Medical Imaging*, 2(4):041004. PMC: PMC4748146, PMID: 26870744
- Du J, Cieslak JA, Welsh JL, Sibenaller ZA, Allen BG, Wagner BA, Kalen AL, Doskey CM, Strother RK, Button AM, Mott SL, Smith B, Tsai S, Mezhir J, Goswami PC, Spitz DR, Buettner GR, Cullen JJ (2015). Pharmacological ascorbate radiosensitizes pancreatic cancer. *Cancer Research*, 75(16):3314-26. PMC: PMC4537815, PMID: 26081808

95. Hoover AC, Milhem MM, Anderson CM, Sun W, **Smith BJ**, Hoffman HT, Buatti JM (2015). Efficacy of nelfinavir as monotherapy in refractory adenoid cystic carcinoma: results of a phase II clinical trial. *Head & Neck*, 37(5):722-6. PMC: PMC4285572, PMID: 24596143

- 94. McDowell BD, Chapman CG, **Smith BJ**, Button AM, Mezhir JJ (2015). Pancreatectomy predicts improved survival for pancreatic adenocarcinoma: results of an instrumental variable analysis. *Annals of Surgery*, 261(4):740-745. PMC: PMC4277740, PMID: 24979599
- 93. Anderson CM, Chang T, Graham MM, Marquardt MD, Button A, **Smith BJ**, Menda Y, Sun W, Pagedar NA, Buatti JM (2015). Change of maximum standardized uptake value slope in dynamic triphasic [18F]-fluorodeoxyglucose positron emission tomography/computed tomography distinguishes malignancy from postradiation inflammation in head-and-neck squamous cell carcinoma: a prospective trial. *International Journal of Radiation Oncology \* Biology \* Physics*, 91(3):472-9. PMC: PMC4335357, PMID: 25680593
- 92. Wudhikarn K, **Smith BJ**, Button AM, Habermann TM, Thompson CA, Rosenstein LJ, Syrbu SI, Weiner GJ, Cerhan JR, Link BK (2015). Relationships between chemotherapy, chemotherapy dose intensity and outcomes of follicular lymphoma in the immunochemotherapy era: a report from the University of Iowa/Mayo Clinic SPORE Molecular Epidemiology Resource. *Leukemia & Lymphoma*, 56(8):2365-2372. PMC: PMC4530103, PMID: 25530345
- 91. TenNapel MJ, Lynch CF, Burns TL, Wallace RB, **Smith BJ**, Button A, Domann FE (2014). SIRT6 minor allele genotype is associated with > 5-year decrease in lifespan in an aged cohort. *PLOS One*, 9(12):e115616. PMC: PMC4277407, PMID: 25541994
- 90. Xia C, Leon-Ferre R, Laux D, Deutsch J, **Smith BJ**, Frees M, Milhem M (2014). Treatment of resistant metastatic melanoma using sequential epigenetic therapy (Decitabine and Panobinostat) combined with chemotherapy (Temozolomide). *Cancer Chemotherapy and Pharmacology*, 74(4):691-697. PMC: PMC4175037, PMID: 25062770
- 89. **Smith BJ**, Mezhir JJ (2014). An interactive Bayesian model for prediction of lymph node ratio and survival in pancreatic cancer patients. *Journal of the American Medical Informatics Association*, 21(e2):e203-211. PMC: PMC4173165, PMID: 24444460
- 88. Muruganandham M, Clerkin PP, **Smith BJ**, Anderson CM, Morris A, Capizzano AA, Magnotta V, McGuire SM, Smith MC, Bayouth JE, Buatti JM (2014). 3-dimensional magnetic resonance spectroscopic Imaging at 3 Tesla for early response assessment of glioblastoma patients during external beam radiation therapy. *International Journal of Radiation Oncology, Biology, and Physics*, 90(1):181-189. PMC: PMC4183193, PMID: 24986746
- 87. McGuire SM, Menda Y, Ponto LL, Gross B, TenNapel M, **Smith BJ**, Bayouth JE (2014). Spatial mapping of functional pelvic bone marrow using FLT PET. *Journal of Applied Clinical Medical Physics*, 15(4):4780. PMC: PMC4161980, PMID: 25207403
- 86. Bedford RL, Lourens SG, Lynch CF, **Smith BJ**, Field R (2014). Utility of death certificate data in predicting cancer incidence. *American Journal of Industrial Medicine*, 57(2):153-162. PMC: PMC3951491, PMID: 24037961
- 85. Oleson JJ, Kumar N, **Smith BJ** (2013). Spatiotemporal modeling of irregularly spaced aerosol optical depth data. *Environmental and Ecological Statistics*, 20(2):297-314.

84. Muniz VP, Askeland RW, Zhang X, Reed SM, Tompkins VS, Hagen J, McDowell BD, Button A, **Smith BJ**, Weyedert JA, Mezhir JJ, Quelle DE (2013). RABL6A promotes oxaliplatin resistance in tumor cells and is a new marker of survival for resected pancreatic ductal adenocarcinoma patients. *Genes & Cancer*, 4(7-8):273-284. PMC: PMC3807645, PMID: 24167655

- 83. Barnes KT, **Smith BJ**, Lynch CF, Gupta A (2013). Obesity and invasive penile cancer. *European Urology*, 63(3):588-59. PMID: 23219085
- 82. Nadkarni NJ, Geest KD, Neff T, Young BD, Bender DP, Ahmed A, **Smith BJ**, Button A, Goodheart MJ (2013). Microvessel density and p53 mutations in advanced-stage epithelial ovarian cancer. *Cancer Letters*, 331(1):99-104. PMID: 23268330
- 81. Jacobus JJ, Duda CG, Coleman MC, Martin SM, Mapuskar K, Mao G, **Smith BJ**, Aykin-Burns N, Guida P, Gius D, Domann FE, Knudson CM, Spitz DR (2013). Low-dose radiation-induced enhancement of thymic lymphomagenesis in Lck-Bax mice is dependent on LET and gender. *Radiation Research*, 180(2):156-165. PMC: PMC3821998, PMID: 23819597
- 80. Allen BG, Bahatia SK, Buatti JM, Lindholm KE, Button AM, Szweda LI, **Smith BJ**, Spitz DR, Fath MA (2013). Ketogenic diets enhance oxidative stress and radio-chemo-sensitization of human lung cancer xenografts. *Clinical Cancer Research*, 19(14):3905-3913. PMC: PMC3954599, PMID: 23743570
- 79. Tompkins VS, Han S, Olivier A, Syrbu S, Bair T, Button A, Jacobus L, Wang Z, Raychaudhuri P, Morse III HC, Weiner G, Link B, **Smith BJ**, Janz S (2013). Identification of candidate B-lymphoma genes by cross-species gene expression profiling. *PLOS ONE*, 8(10):e76889. PMC: PMC3793908, PMID: 24130802
- 78. Bauer C, Krueger M, Lamm WJ, **Smith BJ**, Glenny RW, Beichel RR (2013). Airway tree segmentation in serial block-face cryomicrotome images of rat lungs. *IEEE Transactions on Biomedical Engineering*, 61(1):119-130. PMC: PMC3925465, PMID: 23955692
- 77. Witzig TE, Wiseman GO, Maurer MJ, Habermann TM, Micallef I, Nowakowski GS, Ansell SM, Colgan JP, Inwards DJ, Porrata LF, Link BK, Zent CS, Johnston PB, Shanafelt TD, Allmer C, Asmann YW, Gupta M, Ballas ZK, **Smith BJ**, Weiner GJ (2013). A phase I trial of immunostimulatory CpG 7909 Oligodeoxynucleotide and 90Yttrium Ibritumomab Tiuxetan radioimmunotherapy for relapsed B-cell non-Hodgkin lymphoma. *American Journal of Hematology*, 88(7):589-593. PMC: PMC3951424, PMID: 23619698
- 76. Sun RC, Button AM, **Smith BJ**, Hoshi H, Leblond RF, Howe JR, Mezhir JJ (2013). A comprehensive assessment of transfusion in elective pancreatectomy: Risk factors and complications. *Journal of Gastrointestinal Surgery*, 17(4):627-635. PMID: 23423430
- 75. Du J, Nelson ES, Simons AL, Olney KE, Moser JC, Wagner BA, Buettner GR, **Smith BJ**, Teoh ML, Tsao M, Cullen JJ (2012). Regulation of pancreatic cancer growth by superoxide. *Molelcular Carcinogenesis*, 52(7):555-567. PMC: PMC3375391, PMID: 22392697
- 74. Jacobson G, Bhatia S, **Smith BJ**, Button AM, Bodeker K, Buatti J (2012). Randomized trial of pentoxifylline and vitamin E vs standard follow-up after breast irradiation to prevent breast fibrosis, evaluated by tissue compliance meter. *International Journal of Radiation Oncology, Biology, Physics*, 85(3):604-608. PMID: 22846413

73. Harshman LA, Barron S, Button AM, **Smith BJ**, Link BK, Lynch CF, Denburg NL (2012). Population-based exploration of academic achievement outcomes in pediatric acute lymphoblastic leukemia survivors. *Journal of Pediatric Psychology*, 37(4):458-466. PMC: PMC3334536, PMID: 22271791

- 72. Zent CS, **Smith BJ**, Ballas ZK, Wooldridge JE, Link BK, Call TG, Shanafelt TD, Bowen DA, Kay NE, Witzig TE, Weiner GJ (2012). Phase I clinical trial of CpG oligonucleotide 7909 (PF-03512676) in patients with previously treated chronic lymphocytic leukemia. *Leukemia & Lymphoma*, 53(2):211-217. PMC: PMC3438221, PMID: 21812536
- 71. Esser AK, Miller MR, Huang Q, Meier MM, Bernabe DB, Stipp CS, Campbell KP, Lynch CF, **Smith BJ**, Cohen MB, Henry MD (2012). Loss of LARGE2 disrupts functional glycosylation of alphadystroglycan in prostate cancer. *Journal of Biological Chemistry*, 288(4):2132-2142. PMC: PMC3554886, PMID: 23223448
- 70. Bauer C, Sun S, Sun W, Wallace A, **Smith BJ**, Sunderland JJ, Graham MM, Sonka M, Buatti JM, Beichel RR (2012). Automated measurement of uptake in cerebellum, liver, and aortic arch in full-body FDG PET/CT scans. *Medical Physics*, 39(6):3112-3123. PMC: PMC3365916, PMID: 22755696
- 69. Aykin-Burns N, Slane BG, Liu AT, Owens KM, O'Malley MS, **Smith BJ**, Domann FE, Spitz DR (2011). Sensitivity to low-dose/low-LET ionizing radiation in mammalian cells harboring mutations in succinate dehydrogenase subunit C is governed by mitochondria-derived reactive oxygen species. *Radiation Research*, 175(2):150-158. PMC: PMC3080019, PMID: 21268708
- 68. Du J, Liu J, **Smith BJ**, Tsao MS, Cullen JJ (2011). Role of Rac1-dependent NADPH oxidase in the growth of pancreatic cancer. *Cancer Gene Therapy*, 18(2):135-143. PMC: PMC3058504, PMID: 21037555
- 67. Morton CM, Peterson NA, Schneider JE, **Smith BJ**, Armstead TL (2010). Tobacco sales in community pharmacies: remote decisions and demographic targets. *Journal of Community Psychology*, 38(1):39-48.
- 66. Olson AK, Bhatia S, Duncan C, Betts V, **Smith BJ**, Jacobson G (2010). Definitive radiation therapy for the treatment of inoperable endometrial cancer: pelvic radiation followed by HDR brachytherapy or IMRT/conformal boost. *Internation Journal of Radiation Oncology*, 78(3):S421-S422.
- 65. Juweid ME, **Smith BJ**, Itti E, Meignan M (2010). Can the interim fluorodeoxyglucose-positron emission tomography standardized uptake value be used to determine the need for residual mass biopsy after dose-dense immunochemotherapy for advanced diffuse large B-cell lymphoma? *Journal of Clinical Oncology*, 28(34):e719-720. PMID: 20733137
- 64. Chen C, Johnson M, **Smith BJ** (2010). Azidothymidine enhances fluorodexoyuridine mediated radiosensitization. *International Journal of Radiation Oncology, Biology, Physics*, 76(3):905-913. PMC: PMC2900777, PMID: 20159365
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- 59. Sun W, Kalen AL, **Smith BJ**, Cullen JJ, Oberley LW (2009). Enhancing the antitumor activity of adriamycin and ionizing radiation. *Cancer Research*, 69(10):4294-4300. PMID: 19401447
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- 54. Johnson TJ, Guidroz JA, **Smith BJ**, Graham MM, Scott-Conner CE, Sugg SL, Weigel RJ (2009). A single institutional experience of factors affecting successful identification of sentinel lymph node in breast cancer patients. *Surgery*, 146(4):671-677.
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- 51. Dennis LK, VanBeek MJ, Beane Freeman LE, **Smith BJ**, Dawson DV, Coughlin JA (2008). Sunburns and risk of cutaneous melanoma: does age matter? A comprehensive meta-analysis. *Annals of Epidemiology*, 18(8):614-627. PMC: PMC2873840, PMID: 18652979
- 50. Khanna G, O'Dorisio MS, Menda Y, Glasier C, Deyoung B, **Smith BJ**, Graham M, Juweid M (2008). Somatostatin receptor scintigraphy in surveillance of pediatric brain malignancies. *Pediatric Blood & Cancer*, 50(3):561-566. PMID: 17387742

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- 48. Van De Wetering CI, Coleman MC, Spitz DR, **Smith BJ**, Knudson M (2008). Manganese superoxide dismutase gene dosage affects chromosomal instability and tumor onset in a mouse model of T cell lymphoma. *Free Radical Biology Medicine*, 44(8):1677-1686. PMID: 18291119
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- 39. Teoh ML, Sun W, **Smith BJ**, Oberley LW, Cullen JJ (2007). Modulation of reactive oxygen species in pancreatic cancer. *Clinical Cancer Research*, 13(24):7441-7450. PMID: 18094428
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- 21. Jacobson GM, Kamath RS, **Smith BJ**, Goodheart MJ (2005). Thromboembolic events in patients treated with definitive chemotherapy and radiation therapy for invasive cervical cancer. *Gynecologic Oncology*, 96:470-474. PMID: 15661237
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- 12. Rose SL, Goodheart MJ, DeYoung BR, **Smith BJ**, Buller RE (2003). p21 expression predicts outcome in p53-null ovarian cancer. *Clinical Cancer Research*, 9:1028-1032. PMID: 12631602
- 11. Joudi FN, **Smith BJ**, O'Donnell MA, Konety B (2003). Contemporary management of superficial bladder cancer in the United States: a pattern of care analysis. *Urology*, 62:1083-1088. PMID: 14665360

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- 9. Field R, Steck DJ, **Smith BJ**, Brus CP, Fisher EF, Neuberger JS, Lynch CF (2001). The Iowa Radon Lung Cancer Study phase I: residential radon gas exposure and lung cancer. *The Science of the Total Environment*, 272:67-72. PMID: 11379939
- 8. Field RW, Steck DJ, **Smith BJ**, Brus CP, Fisher EF, Neuberger jS, Platz CE, Robinson RA, Woolson RF, Lynch CF (2000). Residential radon gas exposure and lung cancer: the lowa Radon Lung Cancer Study. *American Journal of Epidemiology*, 151(11):1091-1102. PMID: 10873134
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- 6. Field R, Lynch CF, Steck DJ, **Smith BJ**, Brus CP, Neuberger JS, Woolson RF, Fisher EF, Platz CE, Robinson RA (1999). Iowa Radon Lung Cancer Study. *Radiation Research*, 151:101-103.
- 5. Field R, Smith BJ, Lynch CF (1999). Cohen's paradox. Health Physics, 77(3):328-329.
- 4. Fisher EL, Field RW, **Smith BJ**, Lynch CF, Steck DJ, Neuberger S (1998). Spatial variation of residential radon concentrations: the Iowa Radon Lung Cancer Study. *Health Physics*, 75(5):506-513. PMID: 9790560
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- 2. **Smith BJ**, Field RW, Lynch CF (1998). Residential Rn-222 exposure and lung cancer: testing the linear no-threshold theory with ecologic data. *Health Physics*, 75(1):11-17. PMID: 9645661
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## Statistical Software

- 8. **Smith BJ**, Brock K (2018). EffToxDesign: EffTox Phase I/II Clinical Trial Design, R software package, version 0.2. *GitHub*. <a href="https://github.com/brian-j-smith/EffToxDesign">https://github.com/brian-j-smith/EffToxDesign</a>
- 7. **Smith BJ**, Deonovic B (2018). Mamba: Markov chain Monte Carlo for Bayesian analysis, julia software package. *GitHub*. <a href="https://github.com/brian-j-smith/Mamba.il">https://github.com/brian-j-smith/Mamba.il</a>
- 6. **Smith BJ**, Yan J, Cowles MK (2018). ramps: Bayesian Geostatistical Modeling with RAMPS, R software package, version 0.6. *The Comprehensive R Archive Network*. <a href="http://cran.r-project.org/package=ramps">http://cran.r-project.org/package=ramps</a>
- 5. **Smith BJ** (2017). qibm: Quantitative Imaging Biomarker Modeling, R software package, version 0.3. *GitHub*. <a href="https://github.com/brian-j-smith/qibm">https://github.com/brian-j-smith/qibm</a>
- 4. **Smith BJ** (2016). boa: Bayesian Output Analysis Program for MCMC, R software package, version 1.1.8. *The Comprehensive R Archive Network*. <a href="http://cran.r-project.org/package=boa">http://cran.r-project.org/package=boa</a>

3. **Smith BJ**, Butcher B, Peterson RA (2016). Parkinson's Clinical Trials Design Tool, R Shiny software application. <a href="https://github.com/brian-j-smith/PPMITrialDesign">https://github.com/brian-j-smith/PPMITrialDesign</a>

- 2. **Smith BJ** (2014). Survival calculator for surgically treated pancreatic cancer patients, R Shiny software application. <a href="http://www.myweb.uiowa.edu/bjsmith/pancreas/">http://www.myweb.uiowa.edu/bjsmith/pancreas/</a>
- 1. **Smith BJ** (2013). magma: Matrix Algebra on GPU and Multicore Architectures, R software package, version 0.2. *The Comprehensive R Archive Network*. http://cran.r-project.org/package=magma

#### Other Publications

**Smith BJ**, Deonovic B (2018). Mamba: Markov chain Monte Carlo for Bayesian analysis in julia (documentation). <a href="http://mambajl.readthedocs.io/">http://mambajl.readthedocs.io/</a>

**Smith BJ** (2001). A Bayesian framework for analyzing exposure data from the Iowa radon lung cancer study. *PhD Dissertation, Department of Preventive Medicine, University of Iowa, Iowa City, IA* 

#### **Invited Presentations**

- 22. Holden Comprehensive Cancer Center Biostatistics Core (Smith BJ)
  2016: Invited Lecture, Informatics Showcase, University of Iowa Informatics Initiative, Iowa City, Iowa, United States
- 21. ramps: An R Package for Unified Geostatistical Modeling of Complex Spatiotemporal Data (**Smith BJ**, Yan J, Cowles MK)
  - Invited Lecture, Seminar Series, Department of Biostatistics, University of Alabama, Birmingham, Alabama: 2009
  - Invited Presentation, SAMSI Program on Space-time Analysis for Environmental Mapping, Epidemiology and Climate Change, National Science Foundation, Research Triangle Park, North Carolina: 2009
  - Joint Statistical Meetings, American Statistical Association, Washington, District of Columbia: 2009
  - Invited Lecture, Innovations in Design, Analysis, and Dissemination: Frontiers in Biostatistical Methods, American Statistical Association, Kansas City, Missouri: 2010
- 20. Joint Spatio-Temporal Modeling of Low Incidence Cancers Sharing Common Risk Factors (**Oleson JJ**, Smith BJ) Invited Lecture, Department of Statistics, Iowa State University, Ames, Iowa: 2007
- 19. Computing for Bayesian Spatial Estimation and Prediction with Application to Residential Radon (Cowles K, Smith BJ, Yan J) Invited Lecture. DIMACS Workshop on Markov Chain Monte Carlo: Synthesizing Theory and Practice, Rutgers University, Piscataway, New Jersey: 2007
- 18. Geostatistical Hierarchical Model for Temporally Integrated Data Measured with Error (**Smith BJ**) Invited Lecture, Spring Meeting, Eastern North American Region of the International Biometry Society, Tampa, Florida: 2006
- 17. Geostatistical Hierarchical Model for Temporally Integrated Data Measured with Error (**Smith BJ**, Oleson JJ) Invited Lecture, Department of Biostatistics, University of Iowa, Iowa City, Iowa: 2006

16. Fusing Point-Referenced Radon Data with Areal Uranium Data Arising from a Common Spatial Process (Cowles MK, Smith BJ) Invited Lecture, Department of Statistics, University of Wisconsin, Madison, Wisconsin: 2004

- 15. Prostate Cancer Meta-Analysis: Combining Dose-Response Data, Study-Specific Covariates, and Dietary Quality Scores (**Smith BJ**, Dennis L, Snetselaar LG) Invited Lecture, College of Public Health, University of Iowa, Iowa City, Iowa: 2004
- 14. Modeling the Distribution of Radon Levels in Iowa: Combining Multiple Sources of Spatial Data (Smith BJ) Invited Lecture, Kohn Colloquium, Department of Geography, University of Iowa, Iowa City, Iowa: 2004
- Modeling the Distribution of Environmental Radon Levels in Iowa: Combining Multiple Sources of Spatially Misaligned Data (Smith BJ) Invited Lecture, Department of Statistics, University of Iowa, Iowa City, Iowa: 2004
- 12. Iowa and Missouri Residential Radon Studies: State-of-the-Art Exposure Assessment (**Field R**, Steck DJ, Smith BJ, Lynch CF, Lubin JH, Parkhurst MA, Alavanja MC) Invited Lecture, First National Cancer Institute Leadership Workshop: Tobacco, Diet, and Genes, Chicago, Illinois: 2004
- 11. Bayesian Statistics: An Idea Whose Time Has Come (**Smith BJ**) Invited Lecture, Statistics Symposium, Arkansas State University, Jonesboro, Arkansas: 2004
- Iowa Radon Lung Cancer Study: Exposure Assessment (Field R, Lynch CF, Steck DJ, Smith BJ, Brus CP, Neuberger JS, Woolson RF, Fisher EF, Platz CE, Robinson RA) Invited Lecture, American Chemical Society, New York City, New York
- 9. Assessing the Proportion of Treatment Effect Captured by Two Surrogate Markers Measured Longitudinally (**Cowles MK**, Smith BJ) Invited Lecture, Department of Biostatistics, University of Iowa, Iowa City, Iowa
- 8. Beyond BEIR VI The Iowa Radon Lung Cancer Study (**Field R**, Steck DJ, Smith BJ, Brus CP, Fisher EF, Neuberger JS, Lynch CF) Invited Lecture, Illinois Department of Nuclear Safety, Radon Professionals Conference, University of Illinois at Chicago School of Public Health, Peoria, Illinois: 1999
- 7. What Do We Know About the Risk Posed by Residential Radon? The Iowa Radon Lung Cancer Study (**Field R**, Steck DJ, Smith BJ, Brus CP, Fisher EF, Neuberger JS, Lynch CF) Invited Lecture, Annual Education Conference, Illinois Environmental Health Association, Peoria, Illinois: 1999
- 6. The Iowa Radon Lung Cancer Study Phase I: Residential Radon Gas Exposure and Lung Cancer (Field R, Steck DJ, Smith BJ, Brus CP, Fisher EF, Neuberger JS, Lynch CF) Invited Lecture, Radon in the Living Environment, European Commission, Directorate General for Science, R&D Radiation Research Unit, Athens, Greece: 1999
- 5. The Iowa Radon Lung Cancer Study Phase I: Improved Methods for Residential Radon Exposure Assessment (**Field R**, Steck DJ, Smith BJ, Brus CP, Fisher EF, Neuberger JS, Lynch CF) Invited Lecture, Interagency Workshop on the Role of Human Exposure Assessment in the Prevention of Environmental Disease, National Institute for Environmental Health Sciences, Rockville, Maryland: 1999

4. Preliminary Findings of the Iowa Radon Lung Cancer Study (**Field R**, Steck DJ, Smith BJ, Brus CP, Fisher EF, Neuberger JS, Lynch CF) Invited Lecture, Radon Conference, American Association of Radon Scientists and Technologists, Cherry Hill, New Jersey: 1998

- 3. Preliminary Findings of the Iowa Radon Lung Cancer Study (**Field R**, Steck DJ, Smith BJ, Brus CP, Fisher EF, Neuberger JS, Lynch CF) Invited Lecture, Council of Radiation Control Program Directors, U.S. Environmental Protection Agency, Cherry Hill, New Jersey: 1998
- Iowa Radon Lung Cancer Study: Modeling the Linear Excess Risk of Lung Cancer associated with Radon Exposure (Smith BJ) Invited Lecture, Department of Biostatistics, University of Iowa, Iowa City, Iowa: 1998
- Indoor Radon and Risk of Lung Cancer: Iowa Radon Lung Cancer Study (Field R, Steck DJ, Smith BJ, Brus CP, Fisher EF, Neuberger JS, Lynch CF) Invited Lecture, Conference on Radiation and Health, American Statistical Association, San Diego, California: 1998

#### **Contributed Presentations**

- 21. Prediction-Guided Inference in Statistical and Machine-Learning Models for Parkinson's Disease Progression (**Ryan A Peterson**, Brandon Butcher, Stephanie Lussier, Brian Smith) Poster, Conference on Predictive Inference and Its Applications, Iowa State University, Ames, Iowa: 2018
- 20. A Novel Approach to Component-Wise Gradient Boosting for High-Dimensional Linear Models (Brandon D Butcher, Brian J Smith) Poster, Conference on Predictive Inference and Its Applications, Iowa State University, Ames, Iowa: 2018
- 19. Convergence Diagnostic for MCMC Draws of a Categorical Variable (**Benjamin Deonovic**, Brian Smith) Oral and Poster Joint Statistical Meetings Chicago, Illinois: 2016
- 18. ramps: An R Package for Unified Geostatistical Modeling of Complex Spatiotemporal Data (**Smith BJ**, Yan J, Cowles MK) Oral, Spring Meeting, Eastern North American Region of the International Biometry Society, Washington, District of Columbia: 2008
- 17. Optimal Adaptive Group Sequential Design for Phase II Clinical Trials: A Bayesian Decision Theoretical Approach (Chen Y, Smith BJ) Poster, Midwest Biopharmaceutical Statistics Workshop, Ball State University, Muncie, Indiana: 2007
- 16. Fusing Point-Referenced Radon Data with Areal Uranium Data Arising from a Common Spatial Process (Cowles MK, Smith BJ) Oral, Annual Meeting, Interface Foundation of North American, Pasadena, California: 2006
- 15. Geostatistical Hierarchical Model for Temporally Integrated Radon Measurements (**Smith BJ**, Oleson JJ) Poster, Conference on Radiation and Health, American Statistical Association, Pacific Grove, California: 2006
- 14. Influence of Pregnancy on Breast Cancer Characteristics and Receptor Status in Iowa Women (**Scott-Connor** CE, Romitti PA, Lynch CF, Smith BJ, Lal G, Wilkinson N) Poster, San Antonio Breast Cancer Symposium, CTRC-AACR, San Antonio, Texas: 2006

13. Variation in Yearly Residential Radon Concentrations in the Upper Midwest (**Zhang Z**, Field R, Smith BJ, Steck BJ) Poster, James F. Jakobsen Graduate Student Conference, University of Iowa, Iowa City, Iowa: 2006

- 12. Variation in Yearly Residential Radon Concentrations in the Upper Midwest (**Zhang Z**, Field R, Smith BJ, Steck BJ) Poster, Research Week, Carver College of Medicine and College of Public Health, University of Iowa, Iowa City, Iowa: 2006
- 11. Venous Thromboembolic Events and Survival in Cervical Carcinoma (**Lammli J**, Jacobson G, Smith BJ, Goodheart MJ) Poster, Research Week, Carver College of Medicine, University of Iowa, Iowa City, Iowa: 2006
- Modeling the Distribution of Environmental Radon Levels in Iowa: Combining Multiple Sources of Spatially Misaligned Data (Smith BJ) Oral, Joint Statistical Meetings, American Statistical Association, Minneapolis, Minnesota: 2005
- 9. Statistical Issues in the Study of Residential Radon (**Smith BJ**) Oral, New Researcher's Conference, Institute of Mathematical Statistics, Minneapolis, Minnesota: 2005
- 8. Maspin Expression is Activated by Loss of Promoter Methylation in Ovarian Carcinoma (**Rose SL**, Fitzgerald MP, Geest KD, White N, Smith BJ, Domann FE) Poster, Research Week, Carver College of Medicine and College of Public Health, University of Iowa, Iowa City, Iowa: 2005
- 7. Radiographic and Endoscopic Measurement of Esophageal Length in Pediatric Patients (**Yang G**, Bishop W, Smith BJ, Goudy S, Bauman NM) Poster, Annual Meeting, The American Broncho-Esophago-logical Association, Boca Raton, Florida: 2005
- 6. A Bayesian Meta-Analysis of the Impact of Dietary Fat Intake on Prostate Cancer Risk (**Smith BJ**, Dennis L, Snetselaar LG) Poster, Research Week, Carver College of Medicine, University of Iowa, Iowa City, Iowa: 2004
- 5. Is Being Obese and Eating a Low Carbohydrate Diet the Norm among Both Sexes A Cross Sectional Survey Study in a Rural Community of Iowa (**Bardia A**, Snetselaar LG, Smith BJ, Lowe J, Peterson J, Faryle N) Poster, Annual Meeting, American College of Epidemiology, Boston, Massachusetts: 2004
- Bayesian Risk Analysis of Radon Exposure Data from the Iowa Radon Lung Cancer Study (Smith BJ)
   Oral, Conference on Monte Carlo in the New Millennium, Department of Statistics, University of
   Florida, Gainesville, Florida: 2001
- Bayesian Spatial Analysis for Data Obtained from Multiple Measurement Sources (Smith BJ, Cowles MK) Oral, Spring Meeting, Eastern North American Region of the International Biometry Society, Chicago, Illinois: 2000
- Bayesian Spatial Analysis of Radon Exposure Data from the Iowa Radon Lung Cancer Study (Smith BJ, Cowles MK) Oral, Annual Meeting, American Statistical Association, Iowa Chapter, Indianola, Iowa: 2000
- Bayesian Spatial Analysis of Radon Exposure Data from the Iowa Radon Lung Cancer Study (Smith BJ, Cowles MK) Oral, Joint Statistical Meetings, American Statistical Association, Indianapolis, Indiana: 2000

# **Grant Activity**

Grant	Role	Period/Amount
Specialized Program of Research Excellence (SPORE) NCI 5 P50 CA097274	George Weiner, <i>PI</i> Brian J Smith, Core <i>Co-Director</i>	9/11/2002- 06/30/2022 \$2,119,373
Cancer Center Support Grant NCI 5 P30 CA086862	George J Weiner, <i>PI</i> Brian J Smith, <i>Core Director</i>	7/14/2000- 11/30/2021 \$1,603,949
Quantitative Imaging to Assess Response in Cancer Therapy Trials NIH 5 U01 CA140206	John Buatti, <i>PI</i> Brian J Smith, <i>Statistician</i>	4/1/2010- 3/31/2020 \$410,850
Pharmacological Ascorbate Combined with Radiation and Temozolomide in GBM Gateway for Cancer Research	Bryan Allen, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	1/1/2018- 12/31/2020 \$229,084
<b>Iowa Summer Institute in Biostatistics (ISIB)</b> NIH T15 HL097622 NIH R25 HL131467	Kathryn M Chaloner, <i>Pl</i> Gideon J Zamba, <i>Pl</i> Brian J Smith <i>Co-Investigator</i>	9/1/2009- 1/31/2019 \$223,457
Pharmacological Ascorbate as a Radiosensitizer in Pancreatic Cancer NIH R01 CA184051	Joseph Cullen, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	4/1/2015- 3/31/2019 \$228,750
MTDH Regulates Fanconi Anemia Repair Pathway to Mediate Drug Resistance NIH 1 R01 CA184101	Xiangbing Ming, <i>PI</i> Kimberly Leslie, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	9/18/2014- 8/31/2019 \$213,854
Targeting Extracellular Histones with Novel RNA Bio-Drugs for the Treatment of Acute Lung Injury DOD W81XWH-16-1-0180	Paloma Giangrande, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	9/15/2016- 9/14/2019 \$299,630
<b>Targeted Therapy for Endometrial Cancer</b> NIH 5 R01 CA099908	Kimberly K Leslie, <i>PI</i> Brian J Smith, <i>Statistician</i>	7/1/2009- 4/30/2018 \$167,184
IGERT: Geoinformatics for Environmental and Energy Modeling and Prediction (GEEMaP) NSF 0966130	Mary K Cowles, <i>PI</i> Brian J Smith, <i>Supporting</i>	7/15/2010- 6/30/2018 \$412,399
Developing a Treatment Planning System for Next Generation Rotating-Shield Brachytherapy NIH R01 EB020665	Xiaodong Wu, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	7/1/2017- 6/30/2018 \$225,000
Developing Enabling PET-CT Image Analysis Tools for Predicting Response in Radiation Cancer Therapy NIH R21 CA209874	Xiaodong Wu, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	9/6/2016- 7/31/2018 \$130,500

Grant	Role	Period/Amount
Improving Pelvic Cancer Patient Chemoradiotherapy Outcomes with FLT PET Imaging NIH 5 R01 CA169336	Sarah McGuire, <i>PI</i> Brian J Smith, <i>Statistician</i>	9/22/2012- 6/30/2015 \$201,275
Gene-Environment Interaction Effects Influence the Risk of Breast, Prostate and Colorectal Cancer HCCC Oberley Seed Grant	Brian J Smith, <i>PI</i>	5/1/2012- 4/30/2014 \$50,000
Role of Dystroglycan in Prostate Cancer Progression NIH 1 R01 CA130916	Michael Henry, <i>PI</i> Brian J Smith, <i>Statistician</i>	7/10/2008- 5/31/2013 \$199,270
Mitochondrial-Derived Oxidants and Cellular Responses to Low Dose/Low LET Ionizing Radiation DoE DE-SC0000830	Douglas Spitz, <i>PI</i> Brian J Smith <i>Statistician</i>	9/1/2009- 1/1/2011 \$233,779
Statistics in Microbiology, Infectious Diseases & Bioinformatics NIH 1 T32 GM077973	Kathryn M Chaloner, <i>PI</i> Brian J Smith, <i>Supporting</i>	8/1/2006- 6/30/2011 \$92,799
Dosimetry in Children and Young Adults with Neuroblastoma or Neuroendocrine Tumors NIH R21 CA134198	Sue O'Dorisio, <i>PI</i> Brian J Smith, <i>Statistician</i>	8/1/2008- 7/31/2011 \$338,339
ARRA: Dosimetry Guided Phase II of 90Y- DOTA-tyr3-Octreotide + Retinoic Acid in Kids NIH 1 R21 CA141840	Sue O'Dorisio, <i>PI</i> Brian J Smith, <i>Statistician</i>	8/15/2009- 7/31/2011 \$220,000
Mechanisms of Ascorbate-Induced Cytotoxicity in Pancreatic Cancer NIH 1 R21 CA137230	Joseph Cullen, <i>Principal</i> Brian J Smith, <i>Statistician</i>	11/1/2009- 6/30/2010 \$110,000
Epidemiological and Medical Monitoring Proposal of Former Department of Defense Workers at the Iowa Army Ammunitions Plant in Middletown, Iowa DoD W911SR-05-C-005	Laurence J Fuortes, <i>PI</i> Brian J Smith, <i>Statistician</i>	8/29/2005- 9/28/2010 \$800,000
Ad5-TRAIL Gene Therapy for Prostate Cancer DoD X81XWH-05-1-0536	Richard Williams, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	5/19/2006- 7/1/2008 \$190,000
Sexually Transmitted Infections as a Risk Factor for Prostate Cancer among Military Personnel DoD PC030310	Leslie K Dennis, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	4/1/2004- 1/1/2007 \$553,125

Grant	Role	Period/Amount
Evaluation of the Edit Process as Applied to Lung Cases (SEER) N01-PC-35143	Charles F Lynch, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	8/1/2003- 9/30/2007 \$2,788,639
Comprehensive Assessment of Rural Health in Iowa Iowa Department of Public Health 5883CA02	Kelly J Donham, <i>PI</i> Brian J Smith, <i>Consultant</i>	1/1/2004- 8/31/2006 \$396,981
<b>Iowa and Missouri Radon Lung Cancer Study</b> NCI 5 R01 CA85942	R William Field, <i>Principal</i> Brian J Smith, <i>Co-Investigator</i>	1/17/2001- 12/31/2005 \$250,000
Cumulative Sun Exposure and Melanoma: A Meta-Analysis ACS RSGPB-04-008-01-CPPB	Leslie K Dennis, <i>PI</i> Brian J Smith, <i>Co-Investigator</i>	1/1/2004- 12/31/2005 \$261,000
Bayesian Models for Meta-Analysis: The Impact of Dietary Fat Intake on Prostate Cancer CPH-COM New Investigator Award	Brian J Smith <i>, PI</i>	1/1/2003- 12/31/2003 \$5,000

## **Teaching**

#### Primary Instructor, University of Iowa

Special Topics in Biostatistics: Matrix Theory (BIOS:7700) – Course Creator

PhD level biostatistics course: Fall 2009

Advanced Biostatistics Seminar: Bayesian Methods and Design (BIOS:7600) - Course Creator

PhD level biostatistics course: Fall 2008, Fall 2010

Advanced Biostatistics Seminar: Statistical Methods in Bioinformatics (BIOS:7600) – Course Creator

PhD level biostatistics course: Spring 2012, Spring 2014, Spring 2016

Preceptorship in Biostatistics (BIOS:7500)

Master's level biostatistics supervised research project: Fall 2003, Fall 2005, Spring 2006, Fall 2006, Spring 2009, Spring 2010, Fall 2011, Fall 2012, Spring 2014, Fall 2014, Spring 2015, Fall 2016

Bayesian Methods and Design (BIOS:6810) - Course Creator

PhD level biostatistics course: Spring 2013, Spring 2015

Statistical Machine Learning for Biomedical & Public Health Data (BIOS:6720) - Course Creator

PhD level biostatistics course: Spring 2018

Applied Survival & Cohort Data Analysis (BIOS:6210)

Master's level biostatistics course: Spring 2003, Spring 2005

Applied Categorical Data Analysis (BIOS:6110)

Master's level biostatistics course: Fall 2003, Fall 2004, Fall 2005, Fall 2007

Biostatistical Methods in Categorical Data Analysis (BIOS:5730) - Course Creator

Master's level biostatistics course: Spring 2007, Spring 2008, Spring 2010, Spring 2017

Biostatistical Methods II (BIOS:5720)

Master's level biostatistics course: Spring 2009, Spring 2011

Biostatistical Computing with R and SAS (BIOS:5510)

Master's level biostatistics course: Fall 2011-2017

Introduction to Biostatistics (BIOS:4120)

Master's level course for non-biostatistics majors: Fall 2001, Spring 2002, Summer 2002, Fall 2002, Spring 2006

Biostatistics Seminar for Radiation Oncology – Course Creator 15 lectures for medical residents: Fall 2010, 2012, 2014, 2016

#### Contributed Lectures, University of Iowa

General Biostatistics (BIOS:4110)

Undergraduate level course for Iowa Summer Institute in Biostatistics (ISIB) Program: Summer 2010-2017

Biostatistics Seminar for Hematology, Oncology, and Blood & Marrow Transplantation Core Medical fellows: Fall 2006, Spring 2010

Bioinformatics Summer Course, Iowa Institute for Human Genetics

R training for graduate students and professionals: Summer 2015-2016

Environmental Health Sciences Institute for Rural Youth High school students: Summer 2002

#### Course Supervisor, University of Iowa

Applied Survival & Cohort Data Analysis (BIOS:6210)

Master's level biostatistics course: Spring 2007

# **Mentoring**

#### **Preceptorship Supervisor**

Michael Bishop (In progress)

Brandon Butcher, Stephanie Lussier, Ryan Peterson (2016) "The Parkinson's Progression Markers Initiative: Data Challenge." Report

Janel Barnes (2015) "Statistical Modeling of Biomedical Imaging Features for Lung Nodule Classification and Screening"

Joseph Moen (2015) "Prognostic Value of Solitary versus Non-isolated Peritoneal Carcinomatosis in Metastatic Colorectal Patients: A Pooled Analysis Based on 9,629 Individual Patient Data from Prospective Randomized Studies"

Kaitlin Lockhart (2014) "Screening the Performance of Predicting Cancer Recurrence with Quantitative Imaging Metrics Measured with Semi-automated Methods"

Nan Hu (2013) "MCMC Sampler Design for Hierarchical Modeling of Cancer Lymph Node Ratio and Survival"

Camden Bay (2012) "Exploration of the 3D Visualization of Tumor Growth over Time Using PET Scans"

Jennifer Griffiths (2012) "flowGUI: A Custom R Graphical Interface for the Visualization and Analysis of Flow Cytometry Data"

Jun Yin (2009) "Bayesian Survival Analysis of Stereotactic Radiosurgery Treated Patients"

Carmen Smith (2009) "Survival and Tumor Growth Analysis of Cancer Treatments in Mice"

Kainan Sun (2006) "Regression Calibration for the Iowa Radon and Lung Cancer Study"

Li Zhou (2006) "Computing Scores for Published Categories of a Continuous Risk Factor"

Lixun Zhang (2005) "Leukemia Rates in Iowa and their Association with Predicted County-Average Radon Levels"

Boikanyo Makubate (2004) "Subcutaneous and Intraperitoneal Delivery of Cancer Vaccines and Their Comparative Effect on Tumor Growth in Mice"

Qun Guo (2004) "The Effect of Housing Characteristics on Temporal Variation of Indoor Radon Levels"

Adam Summers (2003) "Home Radon Detection: Can Short-Term Measurements Predict with Long-Term Accuracy?"

#### PhD Thesis Advisor

Alexandra Curtis (In progress)

Brandon Butcher (In progress)

Benjamin Deonovic (2017) "MCMC Sampling Methods for Binary Variables with Application to Haplotype Phasing and Allele Specific Expression"

Keyla Pagan-Rivera (2017) "Improved Adjustment for Covariate Measurement Error in Radon Studies: Alternatives to Regression Calibration"

Andrew Ghattas (2017) "Medical Imaging Segmentation Assessment via Bayesian Approaches to Fusion, Accuracy and Variability Estimation with Application to Head and Neck Cancer"

Jun Yin (2014) "Bayesian Statistical Modeling in Epidemics and the Contact Networks that Transmit Them"

Yiyi Chen (2008) "Optimal Adaptive Group Sequential Design for Phase II Clinical Trials: A Bayesian Decision Theoretic Approach"

#### Other Mentoring

- Master's advisor for 22 Biostatistics graduate students: 2004-2017
- Member of 46 PhD Thesis Committees (1 Biomedical Engineering, 19 Biostatistics, 8
   Epidemiology, 7 Statistics, 3 Occupational and Environmental Health, 3 Pharmacy, 1 Applied
   Mathematics, 1 Geography, 1 Health Management and Policy, 1 Nursing, 1 Statistical Genetics):
   2003-2017
- Research project mentor for 26 students in the NHLBI-funded Iowa Summer Institute in Biostatistics at the University of Iowa: 2008-2017

 Member of 9 Master's Thesis Committees (7 Occupational and Environmental Health, 1 Electrical and Computer Engineering, 1 Epidemiology): 2002-2018

#### **Honors and Awards**

- University of Iowa College of Public Health Teaching Award: 2014
- Delta Omega Honor Society for Public Health: 2009
- American Statistics Association Conference on Radiation and Health New Investigator Research Award: 2006
- U.S. Environmental Protection Agency Children's Environmental Health Recognition Award:
   2006
- American Broncho-Esophagological Association Annual Scientific Session Steben D. Gray Resident's Research Award: 2005
- University of Iowa College of Public Health New Investigator Research Award: 2003
- University of Iowa College of Public Health Milford E. Barnes Graduate Student Award: 2001
- American Statistical Association Statistical Computing Section John M. Chambers Statistical Software Award: 2000
- University of Iowa Excellence in Teaching Award for Graduate Teaching Assistants: 1997
- US Congress Barry M. Goldwater Scholarship: 1992

#### Service

#### Department of Biostatistics, University of Iowa

- PhD Comprehensive Examination Committee: 2002-2004, 2013-Present
- Master's Comprehensive Examination Committee: 2003-2004, 2005 (Fall Chair), 2006-2007,
   2008 (Summer Chair), 2009, 2010-2011 (Summer Chair), 2012-2015, 2017 (Summer Chair), 2018 (Summer Chair)
- MS and PhD Curriculum Committee: 2007-2008, 2012-2014 (Chair), 2015-Present
- Computing Committee: 2005, 2006-2014 (Chair), 2015-Present
- Promotion & Tenure Departmental Consulting Groups: 2017-2018 (1: Chair, 1: Member)
- Diversity Committee: 2008-2017
- Faculty Search Committee: 2011-2014, 2014-2015 (Chair), 2016-2017
- Seminar Committee: 2003, 2004 (Chair), 2005, 2006 (Chair), 2014-2015
- Admissions and Recruitment Committee: 2003-2007; 2008-2009
- Departmental Self-Study Committee: 2007-2008
- Social Event Committee: 2006-2007
- MPH Curriculum Committee: 2004-2005
- Teaching Assistant Supervisor: 2001-2002 (6), 2005 (1), 2006 (3), 2013 (1)
- Teaching Evaluation and Promotion Committee: 1996-1997
- Biostatistics Student Organization: 1996-1997 (Chair)

#### College of Public Health, University of Iowa

- Philanthropy Committee: 2015-Present
- Research Council: 2018-2021

- 5-Year Peer Review of Tenured Faculty: 2018 (4)
- Global Public Health Committee: 2014-2015
- Computation and Informatics Committee: 2010-2014
- Associate Dean for Administration Search Committee: 2014
- Promotion & Tenure Collegiate Consulting Groups: 2009-2013
- Research Week Judge: 2012
- Delta Omega Student Poster Session Competition Judge: 2011
- Faculty Council: 2004-2005, 2008, 2009 (Secretary), 2010 (Chair)
- Epidemiology Department Internal Review Committee: 2009
- Computation and Informatics Committee: 2007-2008
- New Investigator Research Award Committee: 2008
- Admissions Committee for MPH in Clinical Investigation: 2002-2006
- Center for Health Effects and Environmental Contaminants, Statistical Consultant: 2002-2004
- Academic Misconduct Review Committee: 2003-2004
- Continuing Education and Seminar Committee: 2003-2004
- Instructional Development and Evaluation Committee: 2003-2004
- Website Committee: 2002-2003

#### Holden Comprehensive Cancer Center, University of Iowa

- Protocol Review and Monitoring Committee: 2001-Present
- Data Safety and Monitoring Committee: 2006-Present
- Population Research Core Advisory Committee: 2009-Present
- Biostatistics Core Staff Supervisor: 2010-Present
- Cancer Epidemiology and Population Science Program Leadership Committee: 2016-Present
- Graduate Research Assistant Supervisor: 2005-2008, 2016-2018
- Biostatistician Search Committee Chair: 2010, 2013, 2014
- American Cancer Society Seed Grant Reviewer: 2011

#### University of Iowa

- Iowa Informatics Initiative (UI3) Steering Committee: 2013-Present
- Research Computing IT Council, Information Technology Services and Office of the Vice President for Research & Economic Development: 2017-Present
- Faculty Search Committee, Department of Biology: 2016-2017
- Admissions Committee for Bioinformatics Interdisciplinary Graduate Program: 2014-2016
- Center for Global and Regional Environmental Research Seed Grant Reviewer: 2007, 2015
- Faculty Search Committee, Department of Statistics and Actuarial Science: 2014-2015
- Faculty Search Committee, Department of Management Sciences: 2014
- Provost and Vice President for Research Informatics Task Force: 2013
- Jakobsen Graduate Student Conference Judge: 2006-2012
- Women in Science and Engineering Student Travel Grant Reviewer: 2009, 2011

#### **Professional Organizations**

Phi Beta Kappa

Member: 1992-Present

American Statistical Association Member: 1999-Present

JSM Session Chair, Boosting, Ensemble Learning, and Other Data-Mining Methods: 2009 JSM Session Organizer, Efficient Methods for the Analysis of Spatial Data: Computing and

Application: 2009

JSM Session Chair, Monitoring and Modeling Air Quality and its Health Effects: 2005

Eastern North American Region of the International Biometric Society

Member: 2001-Present

Regional Advisory Board: 2009-2011

Delta Omega

Member: 2009-Present

President of Alpha Phi Chapter: 2015-2016 Vice President of Alpha Phi Chapter: 2014-2015

SAMSI Program on Space-time Analysis for Environmental Mapping

Co-Chair, Epidemiology and Climate Change, Statistical Computing Subgroup: 2010

American Mathematical Association

Member: 2002-2006

#### Journal/Book Reviews

- BMC Medical Research Methodology
- BMC Pediatrics
- Cancer Chemotherapy and Pharmacology
- Circulation
- Communications in Statistics
- Computational Statistics and Data Analysis
- Environmental and Ecological Statistics
- Environmental Health Perspectives
- Environmetrics
- Health Physics
- International Journal of Cancer
- Journal of the American Informatics Association
- Journal of Applied Statistics

- Journal of Agricultural, Biological, and Environmental Statistics
- Journal of Clinical Oncology
- Journal of Computational and Graphical Statistics
- Journal of Environmental Management
- Journal of Toxicology & Environmental Health
- Radiation Protection Dosimetry
- Science of the Total Environment
- Statistical Computing
- Statistics and Computing
- Statistics in Medicine
- Book editor review for EnteR Monte Carlo Statistical Methods

#### **External Review Committees**

#### **Faculty Promotion**

Drexel University School of Public Health, Mayo Clinic College of Medicine, Rutgers University School

of Public Health, University of Arizona College of Public Health, West Virginia University School of Public Health, Peking University School of Mathematics

NCI Subcommittee F, Institutional Training and Education Study Section
Reviewer and Permanent Member: October 2016, February 2017, June 2017, October 2017, February 2018, June 2018

NCI SPORE V Review (P50) Reviewer: February 2018

NIH Preclinical Pediatric Testing Consortium (U01)

Reviewer: April 2015

NIH Cancer Biomarkers Study Section

Reviewer: February 2010, June 2010, October 2010, February 2011

NIH Cancer Prevention Study Section

Reviewer: September 2010

United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)

Lead Writer, Effects of Exposure to Radon in Home and Workplaces Expert Group: 2016-Present

US EPA Environmental Statistics Research: Novel Analyses of Human Exposure Related Data Reviewer: April 2003

Veterans Affairs Lung Cancer Surgery or Stereotactic Radiotherapy (VALOR) Cooperative Study Data Monitoring Committee: 2016-Present