# Curriculum Vitae Cavan Reilly, Ph.D.

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## Address

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#### Education

Ph.D. Columbia University, 2000, Statistics

M.A. New School for Social Research, 1995, Economics

B.S. University of Minnesota, 1993, Sociology

# Experience

2017-present: Professor, Biostatistics, University of Minnesota

2021-present: Director of the Coordinating Centers for Biometric Research

2016–2021: Associate Director of the Coordinating Centers for Biometric Research

2007–2017: Associate Professor, Biostatistics, University of Minnesota

2000–2007: Assistant Professor, Biostatistics, University of Minnesota

2001–2007: Member of graduate faculty in Bioinformatics, University of Minnesota

1997–2000: Preceptor, Statistics, Columbia University

#### Honors and Awards

2019 NIAID Merit Award

2018 Biostatistician Mentor of the Year (University of Minnesota Clinical and Translational Science Institute)

2017 Fellow of the American Statistical Association

2000 Award for exemplary application for Grant in aid of artistry and research, University of Minnesota

2000 John van Ryzin memorial Award for outstanding dissertation in Statistics and Biostatistics

#### Publications in peer-reviewed journals

- 1. Reilly C, Gelman A, Katz J (2001), "Post-stratification without population level information on the post-stratifying variable, with application to political polling", *Journal of American Statistical Association*, 96, 1–12.
- Schacker TW, Nguyen P, Beilman G, Wolinsky S, Larson M, Reilly C, Haase AT (2002) "The impact of inflammation and fibrosis in the T cell zone niche of secondary lymphatic tissues on immune reconstitution during HIV-1 infection", *Journal of Clinical Investigation*, 110, 1133– 1139.
- Schacker TW, Nguyen P, Martinez E, Reilly C, Gatell JM, Horban A, Bakawska E, Berzins B, van Leeuwen R, Wolinsky S, Haase AT, Murphy RL (2002), "Persistent abnormalities in lymphoid tissues of HIV-infected persons on highly active anti-retroviral therapy", Journal of Infectious Diseases, 186, 1092–1097.

- 4. Reilly C, Haase AT, Schacker TW, Krason D, Wietgrefe S (2002), "The clustering of infected SIV cells in lymphoid tissue", *Journal of American Statistical Association*, 97, 943–954.
- Raghavan A, Ogilvie R, Reilly C, Abelson M, Robison R, Raghavan S, Vasdewani J, Krathwohl M, Bohjanen P (2002), "Global analysis of mRNA decay in T cells", Nucleic Acids Research, 30, 5529–5538.
- 6. Reilly C, Wang C, Rutherford M (2003), "Normalization of microarrays using the transcripts that are not differentially expressed", *The Journal of the American Statistical Association*, 98, 868–878.
- 7. Zhang Z, Wietgrefe S, Li Q, Shore M, Lljie D, Reilly C, Lifson J, Haase AT (2004), "The roles of target cell availability, susceptibility and productive infection of resting and activated CD4+ T cells in transmission and acute SIV infection", *Proceedings of the National Academy of the Sciences*, 101, 5640–5645.
- 8. Reilly C, Wang C, Rutherford M (2005), "A method for the comparison of cluster analyses", Statistica Sinica, 15, 19–34.
- 9. Reilly C, Price P, Gelman A, Sandgrathe S (2005), "Using image and curve registration for measuring the goodness of fit of spatial and temporal predictions", *Biometrics*, 60, 954–964.
- 10. Reilly C (2005), "Non-parametric longitudinal analysis via a set of survival problems with application to the analysis of microarrays", *Biostatistics*, 6, 271–278.
- 11. Li Q, Duan L, Estes J, Ma Z-M, Rourke T, Wang Y, Reilly C, Carlis J, Miller C, Haase AT (2005), "Peak SIV replication in resting memory CD4+ T cells depletes gut lamina propria CD4+ T cells", *Nature*, 435.
- 12. Vlasova I, McNabb J, Raghavan A, Reilly C, Williams D, Bohjanen P (2005), "Coordinate stabilization of growth-regulatory transcripts in T cell malignancies", Genomics, 86, 159–171.
- 13. Li Q, Lifson J, Schacker TW, Estes J, Duan L, Reilly C, Carlis J, Liaw L, Haase AT (2005), "Potential roles for follicular dendritic cell associated osteopontin in lymphoid follicles and B cell regulation in HIV-1 and SIV infections", *Journal of Infectious Disease*, 197, 1269–1276.
- 14. Schacker TW, Reilly C, Beilman G, Taylor J, Skarda D, Krason D, Larson M, Haase AT (2005), "Amount of lymphatic tissue fibrosis in HIV infection predicts magnitude of HAART associated change in peripheral CD4 cell count", AIDS, 19, 2169–2171.
- Chen R, Yokoyama M, Sato H, Reilly C, Mansky L (2005), "HIV mutagenesis during antiretroviral therapy: Impact of drug resistant reverse transcriptase and nucleoside and nonnucleoside reverse transcriptase inhibitors on HIV-1 mutation frequencies", *Journal of Virology*, 79, 12045-12057.
- Smith J, Schmechel S, Raghavan A, Abelson M, Reilly C, Katze M, Kaufman R, Bohjanen P, Schiff L (2006), "Reovirus induces and benefits from an integrated cellular stress response", Journal of Virology, 80, 2019–2033.
- 17. Estes J, Li Q, Reynolds MR, Wietgrefe S, Duan L, Shacker T, Picker L, Watkins D, Lifson J, Reilly C, Carlis J, Haase AT (2006), "Premature induction of an immunosuppressive regulatory T cell response during acute SIV infection", *Journal of Infectious Disease*, 193, 703–712.
- 18. Nordgaard CL, Berg KM, Kapphahn RJ, Reilly C, Feng X, Olsen TW, Ferrington DA (2006), "Proteomics of the retinal pigment epithelium reveals altered protein expression at progressive stages of age-related macular degeneration", *Investigative Ophthalmology and Visual Science*, 47, 815–822.

- 19. Hataye J, Moon JJ, Khoruts A, Reilly C, Jenkins M (2006), "Naive and memory CD4+ T cell survival controlled by clonal abundance", *Science*, 312, 114–116.
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- 21. Lore K, Seggewiss R, Guenaga FJ, Pittaluga S, Donahue RE, Krouse A, Metzger ME, Koup RA, Reilly C, Douek DC, Dunbar CE (2006), "In vitro culture during retroviral transduction improves thymic repopulation and output after TBI and autologous PBPC transplantation in rhesus macaques", Stem Cells, 24, 1539–1548.
- 22. Reilly C, Raghavan A, Bohjanen P (2006), "Global assessment of cross-hybridization for oligonucleotide arrays", *Journal of Microbiological Techniques*, 17, 163–172.
- 23. Ethan C, Reilly C, Feng X, Olsen TW, Ferrington DA (2006), "The proteome of central and peripheral retina with progression of age-related macular degeneration", *Investigative Ophthalmology and Visual Science*, 47, 2280–2209.
- 24. Lu H, Reilly C, Banerjee S, Carlin BP (2006), "Bayesian areal wombling via adjacency modeling", Environmental and Ecological Statistics, 14, 433–452.
- 25. Skinner P, Abbassi H, Cheseboro B, Race R, Reilly C, Haase AT (2006), "Comparison of gene expression alterations in the brains of mice infected with three different strains of Scrapie", *BMC Genomics*, 7, 114.
- 26. Hau H, Walsh R, Ogilvie R, Williams D, Reilly C, Bohjanen P (2006), "Tristetraprolin recruits functional mRNA decay complexes to ARE sequences", *Journal of Cellular Biochemistry*, 100(6); 1477–1492.
- 27. Larsson O, Perlman DM, Fan D, Reilly C, Peterson M, Dahlgren C, Liang Z, Li S, Polunovsky VA, Wahlestedt C, Bitterman P (2006), "Apoptosis resistance downstream of eIF4E: posttranscriptional activation of an anti-apoptotic transcript carrying a consensus hairpin structure", Nucleic Acids Research, 34, 4375–4386.
- 28. Reilly C, Zhang Q, Wietgrefe S, Haase AT (2006), "Estimation of relative viral production of activated and non-activated CD4+ T cells", AIDS, 21(2): 163–168.
- 29. Estes JD, Wietgrefe S, Schacker TW, Southern P, Beilman G, Reilly C, Milush JM, Lifson JD, Sodora DL, Carlis JV, Haase AT (2007), "Simian immunodeficiency virus-induced lymphatic tissue fibrosis is mediated by transforming growth factor Beta-1 positive regulatory T cells and begins in early infection", *Journal of Infectious Diseases*, 195(4): 551–561.
- 30. Reilly C, Gelman A (2007), "Weighted variogram estimation for data with clustering", Technometrics, 49(2), 184–194.
- 31. Reilly C, Miller MB, Liu Y, Oetting WS, King R, Blumenthal M (2007), "Linkage analysis of a cluster-based quantitative phenotype constructed from pulmonary function test data in 27 multigenerational families with multiple asthmatic members", *Human Heredity*, 64(2), 136–145.
- 32. Ethen C, Hussong SA, Reilly C, Feng X, Olsen TW, Ferrington DA (2007), "Transformation of the proteosome with age-related macular degeneration", FEBS Letters, 581, 885–890.
- 33. Ethan C, Reilly C, Feng X, Olsen TW, Ferrington DA (2007), "Age-related macular degeneration and retinal protein modification by 4-hydroy-2-nonenal", Investigative Ophthalmology and Visual Science, 48, 3469–3479.

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- 36. Li M, Reilly C, Hanson T (2008), "A semiparametric test to detect associations between quantitative traits and candidate genes in structured populations". *Bioinformatics*, 24(20), 2356–2362.
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- 46. Smith AJ, Schacker TW, Reilly C, Haase AT (2010), "A role for syndecan-1 and claudin-2 in microbial translocation during HIV-1 infection", *Journal of Acquired Immune Deficiency Syndrome*, 55(3), 306–315.

- 47. Winstead CJ, Reilly CS, Moon JJ, Jenkins MK, Hamilton SE, Jameson SC, Way SS, Khoruts A (2010), "CD4+CD25+Foxp3+ regulatory T cells optimize diversity of the conventional T cell repertoire during reconstitution from lymphopenia", *Journal of Immunology*, 184(9), 4749–4760.
- 48. Li M, Reilly C, Hanson T (2010), "Association tests for a censored quantitative trait and candidate gene in structured populations with multilevel genetic relatedness", *Biometrics*, 66(3), 925–933.
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- 58. Sasikala-Appukuttan AK, Kim HO, Kinzel NJ, Hong JJ, Smith AJ, Wagstaff R, Reilly C, Piatak M Jr, Lifson JD, Reeves RK, Johnson RP, Haase AT, Skinner PJ. (2013), "Location and dynamics of the immunodominant CD8 T cell response to SIV∆nef immunization and SIVmac251 vaginal challenge", *PLoS One*, 8(12), e81623.
- 59. Stone MD, Harvey SB, Nelsestuen GL, Reilly C, Hertz MI, Wendt CH. (2014), "Elevated peptides in lung lavage fluid associated with bronchiolitis obliterans syndrome", *PLoS One*, (9)1, e84471.

- 60. Fletcher CV, Staskus K, Wietgrefe SW, Rothenberger M, Reilly C, Chipman JG, Beilman GJ, Khoruts A, Thorkelson A, Schmidt TE, Anderson J, Perkey K, Stevenson M, Perelson AS, Douek DC, Haase AT, Schacker TW. (2014), "Persistent HIV-1 replication is associated with lower antiretroviral drug concentrations in lymphatic tissues", Proceedings of the National Academy of the Science U S A., 111(6), 2307-2312.
- 61. Reilly C, Rasmussen K Selberg T, Stevens J, Jones RS (2014), "Biofilm community diversity after exposure of 0.4% stannous flouride gels", *Journal of Applied Microbiology*, 117, 1798–1809.
- 62. Laguna TA, Williams CB, Brandy KR, Welchlin-Bradford C, Moen CE, Reilly CS, Wendt CH (2014), "Sputum club cell protein concentration is associated with pulmonary exacerbation in cystic fibrosis", *Journal of Cystic Fibrosis*, S1569-1993(14), 00229-X.
- 63. Refsland EW, Hultquist JF, Luengas EM, Ikeda T, Shaban NM, Law EK, Brown WL, Reilly C, Emerman M, Harris RS (2014), "Natural polymorphisms in human APOBEC3H and HIV-1 Vif combine in primary T lymphocytes to affect viral G-to-A mutation levels and infectivity", PLoS Genetics, 10(11), e1004761.
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- 66. Smith AJ, Wietgrefe SW, Shang L, Reilly CS, Southern PJ, Perkey KE, Duan L, Kohler H, Müller S, Robinson J, Carlis JV, Li Q, Johnson RP, Haase AT (2014), "Live simian immunodeficiency virus vaccine correlate of protection: immune complex-inhibitory Fc receptor interactions that reduce target cell availability", Journal of Immunology, 193(6), 3126–3133.
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- 77. Rudney JD, Jagtap PD, Reilly CS, Chen R, Markowski TW, Higgins L, Johnson JE, Griffin TJ (2015), "Protein relative abundance patterns associated with sucrose-induced dysbiosis are conserved across taxonomically diverse oral microcosm biofilm models of dental caries", *Microbiome*, 3(1) 69.
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#### **Book Chapters**

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- 16. Reilly, C. "Normalization of microarrays in non-standard settings" (2005), Conference for the International Society for Bayesian Analysis, Bormio, Italy, January 11, 2005.
- 17. Reilly, C. "Bayesian calibration of the mass/charge axis in MALDI-TOF mass spectrometry" (2005), Joint Statistical Meetings, Minneapolis, MN, August 8, 2005.

- 18. Fan, D., Bitterman, P., Reilly, C., "Translational Efficiency is Linked to Specific mRNA Elements During Apoptotic Rescue by Enforced Activation of the Protein Synthesis Machinery", International Conference on Intelligent Systems for Molecular Biology, presented by D. Fan, 2005.
- 19. Skinner, P., Abbassi, H., Cheseboro, B., Race, R., Reilly, C., Haase, A., "Gene expression alterations in brains of scrapie infected mice", Pathobiology, presented by P. Skinner, 2005.
- Nordgaard, C.L., Berg, K. M., Kapphahn, B. J., Reilly, C., Feng, X., Olsen, D. A., Ferrington, D. A., "Altered retinal pigment epithelium protein expression associated with the progression of age-related macular degeneration", The Association for Research in Vision and Ophthamalogy, presented by C.L. Nordgaard, 2005.
- 21. Ethen, C.M., Basak, N., Feng, X., Olsen, T.W., Reilly, C., Ferrington, D.A., "Proteomic analysis of retinal protein expression with the progression of AMD", The Association for Research in Vision and Ophthamalogy, presented by C.M. Ethen, 2005.
- 22. Krason, D., Reilly, C., Leduc, R., Neaton, J., Abrams, D., Schacker, T., "Incomplete Immune reconstitution in HIV-1 infection after 2 years of highly active anti-retroviral therapy", The Infectious Disease Society of America, presented by D. Krason, 2005.
- 23. Reilly, C. "Bayesian calibration of the mass/charge axis in MALDI-TOF mass spectrometry" (2005), Eastern North American Biometric Society Meeting, Tampa, FL, March 28, 2006.
- 24. Reilly, C. "A new method for detecting linkage signals from pedigrees in the presence of allelic heterogeneity" (2007), Joint Statistical Meetings, Salt Lake City, UT, August 8, 2007.
- 25. Zheng Y, Reilly C "Bayesian variogram modeling in a metric space" (2007), Joint Statistical Meetings, Salt Lake City, UT, August 8, 2007.
- 26. Li M, Reilly C, Carlin B "Bayesian multivariate spatial models for association mapping in structured samples" (2007), Joint Statistical Meetings, Salt Lake City, UT, August 8, 2007.
- 27. Baker J, Cavert W, Krason D, Reilly C, Henry K, Abrams D, MacArthur R, Peng G, Neaton J, Rapkin J "Poor Initial CD4+ Recovery with Anti-retroviral Therapy Prolongs Immune Depletion and Increases Risk for AIDS and Non-AIDS Diseases: Results from the CPCRA FIRST study" (2007), CROI.
- 28. Li Q, Duan L, Ma Z, Reilly C, Miller C, Haase AT "The critical role CD4+ T cells may play in intra-vaginal transmission of SIV" (2007), 25th Annual Symposium on Nonhuman Primate Models for AIDS.
- 29. Barthold B, Khoruts A, Reilly C, Haase A, Estes J, Schacker T "Collagen deposition limits immune reconstitution in the gut" (2007), CROI.
- 30. Reilly, C. "A spatio-temporal model of viral production by an infected cell" (2008), Joint Statistical Meetings, Denver, CO, August 5, 2008.
- 31. Karunadharma PP, Nordgaard CL, Reilly C, Feng X, Olsen TW, Ferrington DA "Age-related changes in protein content of the human retinal pigment epithelium" (2008), ARVO.
- 32. Baker J, Barthold B, Khoruts A, Estes J, Reilly C, Schacker T "Collagen deposition limits immune reconstitution in the gut" (2008), Conference on Retroviruses and Opportunistic Infections.

- 33. Higgens L, Yang L, Anderson LB, McGowan, TF, Reilly C, Witthuhn BA, Gourley, GR "How reproducible is iTRAQ Triplicate LC-MS/MS analysis of normal colon tissue tryptic peptides labeled with iTRAQ 4-plex reagents" (2008), American Society for Mass Spectrometry.
- 34. Smith AJ, Li Q, Wietgrefe SW, Schacker TW, Reilly CS, Haase AT "The relationship between virus replication and gene expression in lymphatic tissue during HIV-1 infection", 2010, International HIV & Hepatitis Drug Resistance Workshop & Curative Strategies Conference.
- 35. Reilly C "An introductory overview of the current state of statistical genetics" (2011), JSM.
- 36. Skinner P, Kim H, Kinzel N, Reilly C, Olson K. "Treatment of prion disease with heterologous recombinant prion proteins", 2011, Prion 2011, Montreal, Canada.
- 37. Zeng M, Southern PJ, Reilly CS, Schacker TW, Haase AT. "Lymphoid tissue damage in HIV-1 infection depletes naive T cells and limits naive T cell reconstitution after antiretroviral therapy", 2011, Institute for Molecular Virology Symposium, Minneapolis, MN.
- 38. Mauzy MJ, Lancto CA, Enomoto S, Abrohamsen MS, Reilly C, Rutherford MS. "Comparative cryptosporidium transcriptomics reveals disparate patterns of C. parvum and C. hominis gene expression during in vitro culture", 2012, International Giardia and Cryptosporidium Conference, Wellington, New Zealand.
- 39. Li J, Li Y, Chen R, Carrera C, Reilly C, Fok A, Rudney J, Jones R, Aparicio C. "Surface degradation of dental resin composites induced by microcosm biofilms grown in a bioreactor directly from pediatric donor's plaque", 2012, World Biomaterials Congress, Chengdu, China.
- 40. Sanchez J, Rothenberger M, Reilly C, Russ S, Deeks S, Schacker T, "Persistent Abnormalities of Lymphoid Structures in HIV Viremic Controllers", Conference on Retroviruses and Opportunistic Infections, Atlanta, GA, 2013.
- 41. Rothenberger M, Stevenson M, Fletcher C, Beilman G, Chipman J, Khoruts A, Reilly C, Wietgrefe S, Haase AT, Shacker T. "Multifocal detection of HIV-1 RNA in lymphatic tissues during early viral recrudescence after treatment interruption". Conference on Retroviruses and Opportunistic Infections, Atlanta, GA, 2013.
- 42. Laguna TA, Williams CB, Brandy K, Welchin CW, Moen CE, Reilly CS, Wendy CH. "Sputum CC10 concentration as a potential biomarker of cystic fibrosis lung disease". The American Thoracic Society, Philadelphia, PA, 2013.
- 43. Laguna TA, Williams CB, Sauer A, Brandy K, Welchin CW, Moen CE, Reilly CS, Wendt CH. "Urinary desmosine and cathepsin B concentrations in healthy controls without cystic fibrosis". The American Thoracic Society, Philadelphia, PA, 2013.
- 44. Gulcev D, Reilly C, Nelsestuen G, Wendt C. "Plasma metabolites associated with acute exacerbations of chronic obstructive pulmonary disease". American Society for Mass Spectrometry Conference, Minneapolis, MN, 2013.
- 45. Pragman A, Kim H, Reilly C, Wendt C, Isaacson RE. "The lung microbiome in moderate and severe chronic obstructive pulmonary disease". The Aspen Lung Conference, Aspen, CO, 2013.
- 46. Reilly C "Deconvolving taxonomic contributions to group differences in microbiomic investigations". International Conference on Integrative Biology, Las Vegas, NV, 2013.
- 47. Jones RS, Rasmussen K, Reilly C "Examining anti-biofilm therapies to control pathogenic oral bacteria in young children", CTSI scholar poster session, University of Minnesota, MN, 2014.

- 48. Shang K, Reilly C "Nonparametric Bayesian analysis of the 2 sample problem with censoring", Bayesian Young Investigators Meeting, Vienna, Austria, 2014.
- 49. Reilly C. "The use of microbiomics in clinical investigations: overview and some recent contributions". Division of Epidemiology and Community Health, University of Minnesota, MN, 2015.
- 50. Reilly C "Deconvolving taxonomic contributions to group differences in microbiomic investigations with application to COPD". Biostatistics Branch, NIAID, 2016.
- 51. Reilly C and Neaton J "Ongoing Ebola Research in Liberia", University of Minnesota, Department of Infectious Diseases, Oct 2017.
- 52. Neaton J, Reilly C and Badio M "Building Biostatistics Infrastructure in West Africa", International Conference on AIDS and STIs in Africa, Abidjan, Côte D'Ivore, Dec 2017.
- 53. Reilly C "Ongoing Ebola Research in Liberia", University of Minnesota, Global Health Day, April 2018.
- 54. Reilly C and Sherman B "A primer on statistical genetics", Sequence of Webinars for INSIGHT members, Summer 2018.
- 55. Reilly C "A primer on statistical genetics", INSIGHT Community Advisory Board, Seattle, WA, March 2019.
- Reilly C "Statistical Considerations in PALM II", PALM II Kick-off Meeting, Kinshasa, DRC, February, 2020.
- 57. Reilly C "Investigation of Causal Effects of Protein Biomarkers on CVD in Persons with HIV", Conference on Retroviruses and Opportunistic Infections 2020, Boston, MA, given remotely, March 2020.
- 58. Reilly C "A clinical trial for rapid discovery of COVID-19 therapeutics in hospitalized patients", SPH Community Research Day, December 9, 2020.
- 59. Reilly C "Platform trials for COVID-19 therapeutics and the TICO trial", Division of Epidemiology and Community Health Research Seminar, March 5, 2021.

# Current Research Contract and Grant Support

- 1. STRIVE (INSIGHT 018)  $\overline{\text{\{PI: Cavan Reilly\}}}$ 
  - 40% support for Dr. Reilly. (April 2022-Present)
  - Contract
  - STRIVE is an international network conducting trials of interventions for infectious disease emergencies. The network is currently supporting 2 randomized controlled trials of interventions for COVID-19 among inpatients, each with a sample size of 1500. STRIVE's Statistical and Data Management Center is located at the University of Minnesota. The network consists for nine international Coordinating Centers located in Copenhagen, London, Sydney, Washington DC, Nashville, Minneapolis, Paris, and New York and 1 associated with the US VA. The network has over 300 clinical sites on six continents with many sites in LMICs.
- 2. ACTIV-3 (INSIGHT 014 and 016) {PI: Cavan Reilly}

- 4% support for Dr. Reilly. (June 2020-Present)
- Contract
- The International Network for Strategic Initiatives Global HIV Trials (INSIGHT), a NIAID-funded clinical trials network, has been selected by the Operation Warp Speed ACTIV nMAb Master Protocol Steering Committee, Foundation for the National Institutes of Health, to lead development of therapeutic clinical trials focused on neutralizing monoclonal antibodies (nMAbs) in hospitalized patients with COVID-19. INSIGHT's Statistical and Data Management Center (SDMC) is located at the University of Minnesota. The network consists for four international Coordinating Centers (ICCs), located in Copenhagen, London, Sydney, and Washington, and over 200 clinical sites aligned with these ICCs.

# 3. Covid-19 Observational Study (INSIGHT 011)

{PI: Cavan Reilly}

- 5% salary support for Dr. Reilly (April 2020-Present)
- Contract
- This is an international, observational cohort study of adults with SARS-CoV-2 infections who have been assessed as not requiring hospitalization (i.e., outpatients) at the time of screening and enrollment. While a proportion of people with COVID-19 have sufficiently severe symptoms to require hospitalization at the time of initial symptom onset, in others the disease may remain mild, or symptoms may worsen a few days after initial presentation with relatively mild symptoms. There is an urgent need for understanding the progression of disease for individuals with SARS-CoV-2 infection who do not require immediate hospitalization.

#### 4. OTAC (INSIGHT 012)

{PI: Cavan Reilly}

- 8% support for Dr. Reilly. (June 2020-Present)
- Contract
- This contract supports a multi-center RCT of a clinical trial of hyperimmune IVIG in outpatients at over 50 sites glovally. The data coordinating center is located at the University of Minnesota and is supported by the INSIGHT network.

# 5. ITAC (INSIGHT 013)

{PI: Cavan Reilly}

- 1% support for Dr. Reilly. (August 2023-Present)
- Contract
- This contract supports a multi-center RCT of a clinical trial of hyperimmune IVIG in inpatients at over 50 sites glovally. The data coordinating center is located at the University of Minnesota and is supported by the INSIGHT network.

#### 6. START

{M-PI: Birgit Grund and Cavan Reilly}

- 2% support for Dr. Reilly. (August 2023-Present)
- Contract
- This contract supports ongoing work from the START trial which randomized HIV positive individuals to early versus defered treatment. Analysis of the long-term follow-up data continues.

# 7. FLU (INSIGHT 003)

{PI: Cavan Reilly}

- 4% support for Dr. Reilly. (August 2023-Present)
- Contract
- This contract supports an ongoing global observational study of influenza conducted at over 50 sites since 2009.

# 8. The BLOODSAFE Data Coordinating Center

{PI: Cavan Reilly}

- 20% salary support for Dr. Reilly (July 2020-Present)
- Cooperative Agreement
- The goal of this project is to provide biostatistical leadership and data management infrastructure for the BLOODSAFE initiative, an NHLBI initiative which seeks to increase the supply of safe blood available for transfusion in Sub-Saharan Africa through the conduct of clinical trials.

# 9. PREVAIL I: Clinical research management for Ebola

{PI: Cavan Reilly}

- 2% salary support for Dr. Reilly (December 2014-Present)
- Contract
- This grant provides support for data management and logistics for a clinical trial of vaccines for Ebola conducted in Liberia.

#### 10. PREVAIL III

{PI: Cavan Reilly}

- 2% salary support for Dr. Reilly (February 2015-Present)
- Contract
- This grant provides support for data management and logistics for an observational study of Ebola survivors conducted in Liberia.

#### 11. PREVAIL VI

{PI: Cavan Reilly}

- 1% support for Dr. Reilly. (August 2016-Present)
- Contract
- This contract provides statistical support for a genome wide association study of host factors that impact the course of Ebola virus disease.

#### 12. PREVAIL VIII

{PI: Cavan Reilly}

- 2% support for Dr. Reilly. (February 2018-Present)
- Contract
- This contract provides statistical support for a natural history study of persons living with HIV in Liberia.

# 13. PREVAIL XI: COVID-19 Data Management Support Liberia Observational Study {PI: Cavan Reilly}

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- 2% salary support for Dr. Reilly (July 2020-Present)
- Contract
- Design and conduct a cohort study of 1,500 Liberians who test positive for SAR-CoV-2. These individuals will be followed for up to 3 years to understand the progression and sequelae of COVID-19 in a Sub-Saharan context.
- 14. The effect of inflammation and damage to the lymph node structures on protective immunity {PI: Timothy Schacker}
  - 2% salary support for Dr. Reilly (February 2019-January 2024)
  - Grant
  - This proposal will examine vaccine effectiveness as a function of lymph node health.

# Past Research Contract and Grant Support

- 1. NIH salary support from the Great Lakes Center for AIDS Research (PIs: Drs. Ashley Haase and Steve Wolinsky: Northwestern University), 50% effort, co-PI, August 2000–December 2002, 26.5% January 2003–August 2003.
- 2. RA salary and computing support from a University of Minnesota Grant-in-Aid of Research, Artistry, and Scholarship (PI: Cavan Reilly), Filtering for non-Gaussian observations of non-linear systems of stochastic differential equations, August 2001–August 2002.
- 3. CFAR Development funds, from the NIH, 74.5% effort, (PI: Cavan Reilly), June 2003–August 2003.
- 4. NIH salary support from the Genetics of Asthma Project (PI: Malcolm Blumenthal), 15% effort, co-PI, August 2003–May 2007.
- 5. NIH salary support from the Lymphoid Architecture Project (PI: Timothy Schacker), 10% effort, co-PI, August 2003–December 2007.
- Statistical Methods in Cancer Control Epidemiology, (PI: Brad Carlin), 10% effort, co-PI, August 2003–July 2007.
- 7. NIH salary support from the Pathogenesis of HIV-Induced Immunity grant (PI: Ashley Haase), 10% effort, co-PI, April 2004–February 2009.
- 8. NIH salary support from the Genomic analysis of HIV-1 grant (PI: Ashley Haase), 10% effort, co-PI, Dec. 15, 2003–November 2008.
- 9. NIH salary support from the Antifibrotic Drug Discovery in Lung Disease grant (PI: Peter Bitterman), 5% effort, co-PI, April 1, 2004–February 2008.
- 10. NIH salary support from the Regulation of T lymphocyte mRNA grant (PI: Paul Bohjanen), 10% effort, co-PI, September 2002–May 2007.
- 11. Minnesota partnership funds from the Non-exercise induced thermogenesis grant (PI: Kathy Kotz), 10% effort, co-PI, July 2003–June 2005.
- 12. Topical Microbicide Against SIV and Chlamydia (PI: Dr. Ashley Haase), 5% effort, co-PI, September 2008-September 2010.
- 13. Protein Biomarkers in Lung Allograft Function (PI: Dr. Chris Wendt), 10% effort, co-PI, September 2008–September 2013.

- 14. Bronchoalveolar Lavage Cell Biomarkers of Lung Rejection (PI: Dr. Marshall Hertz), 10% effort, co-PI, September 2008–September 2010.
- 15. CTSI Education Pilot (PI: Dr. Terri Laguna), 5% effort, co-PI, January 2013–December 2014.
- 16. CTSI Education Pilot (PI: Dr. Robert Jones), 5% effort, co-PI, January 2013–December 2014.
- 17. A Compartmental Analysis of HIV Reservoirs and Immune Reconstitution (Program Director: Dr. Timothy Schacker PI of Biostatistics Core: Dr. Reilly), 38% effort, September 2008–August 2014.
- 18. Antifibrotic Therapy to Improve Lymph Node Architecture in SIV (PI: Dr. Timothy Schacker), 3.4% effort, co-PI, September 2010–August 2015.
- 19. Microarray Studies to Discover the Mechanisms of the delta-Nef SIV vaccine (PI: Dr. Ashley Haase), 10% effort, September 2010–August 2015.
- 20. Decay Kinetics of SIV with the compound Raltegravir (PI: Dr. Ashley Haase), 2.5% effort, co-PI, September 2011–August 2013.
- 21. Interactions Between Oral Biofilms (PI: Joel Rudney), 10% effort, co-PI, September 2011–August 2016.
- 22. Urinary Biomarkers in Biopsy Defined Early Nephropathy in Types 1 and 2 Diabetes (PI: Dr. Mark Mauer), 10% effort, co-PI, September 2009–October 2015.
- 23. Transcriptomics in the pariparturient Holstein (PI: Dr. Brian Crooker), 10% effort, co-PI, September 2014–October 2017.
- Summer Institute for Biostatistics (PI: Dr. Cavan Reilly), 10% effort, April 2016–December 2018.
- 25. Clinical Research Training in Liberia (PI: Dr. Cavan Reilly), 3% effort, September 2017.
- 26. Calprotectin in oral innate immunity (PI: Dr. Mark Herzberg), 5% effort, November 2016–November 2019.
- 27. Reversing tissue fibrosis (PI: Timothy Schacker), 10% effort, February 2013–January 2018.
- 28. Data Management Support for the Nun Study (PI: Cavan Reilly), 10% effort, October 2019–October 2021.
- 29. Data Analysis Support for CLIMB (PI: Cavan Reilly), 1% effort, December 2019–June 2020.
- 30. Assessment of gene expression profiles related to hepatocellular carcinoma in HCV (PI: Jose Debes), 5% effort, June 2018–June 2020.
- 31. Age-related macular degeneration mitochondria and the CFH genotype (PI: Deborah Ferrington), 5% effort, December 2016–July 2020.
- 32. Interplay between lipophagy and mitophagy in skeletal muscle aging (PI: Edgar Arriaga), 5% effort, July 2016–March 2021.
- 33. DMID COVID-19 ACTT Task Order Award (PI: Jim Neaton), 5% effort, March 2020–March 2021.
- 34. PREVAIL VI (PI: Jim Neaton), 35% effort, July 2016–July 2018.

35. PREVAIL VII (PI: Jim Neaton), 25% effort, July 2017–July 2020.

#### Teaching

Courses I have taught (at the University of Minnesota unless otherwise noted) include:

- 1. Introduction to Statistics (Columbia University, 1998–2000)
- 2. Biostatistics (2001–2002)
- 3. Statistics for Human Genetics and Molecular Biology (2003–2019)
- 4. Modern Nonparametrics (2003)
- 5. Bayesian Data Analysis and Decision Theory (2005–2011)
- 6. Advanced Statistics for Human Genetics (2014–2018)
- 7. Advanced Inference (2015)
- 8. Linear Models (2020-2022)

In addition I have been the thesis advisor for 18 MS theses and 6 PhD dissertations. I have been the project advisor for 1 completed MPH. I have served on the PhD examining committee of 31 students (12 in Biostatistics, 4 in Statistics, 3 in Computer Science with the remainder being for students in various health science areas, such as Epidemiology, Microbiology, Animal Science and Pharmacy).

I have also been actively involved with mentoring programs in the School of Medicine and the School of Public Health: I have been a mentor for 4 assistant professors on awarded training grants and I consult for an assistant professor on her awarded training grant.

# PhD Advising

- 1. Yan Zhang, "Topics in Low Level Analysis of Microarrays", September, 2006.
- 2. Xiaoyan Li, "Statistical Skeleton Estimation", April, 2007.
- 3. Meijuan Li, "Statistical Methods for Genetics and Genomics Studies", December, 2008.
- 4. Xiaoxiao Kong, "Statistical Methods in Genome Sequence Analysis", September, 2011.
- Kan Shang, "Bayesian methods for high dimensional longitudinal data analysis", December, 2016.
- 6. Clara Drew, "Analyzing latent variables with observational data and applications in infectious disease", September, 2022.

#### Service

I serve as one of the cochairs of the new Data Science MS program at the University of Minnesota.

I have served on the following study sections (mix of grants, cooperative agreements and contracts):

- 1. NIH Special Emphasis Panel: HIV Clinical Trial Planning Grant Program
- 2. NIH Special Emphasis Panel: Sustained Release for Antiretroviral Treatment or Prevention of HIV Infection

- 3. HIV Special Emphasis Panel: Centers for AIDS Research
- 4. NIESH/NIH Special Emphasis Panel: Centers for Oceans and Public Health
- 5. NIH Clinical and Integrative Cardiovascular Sciences: ad hoc reviewer
- 6. NIH Clinical Cardiovascular Sciences: ad hoc reviewer
- 7. NIH Infectious Disease, Reproductive Health, Asthma and Pulmonary Health: ad hoc reviewer
- 8. Numerous clinical trial implementation grants for the NIH.

I have also provided written reviews of grants for the NSF and the Natural Sciences and Engineering Research Council of Canada.

I have also reviewed grants for multiple local grant sources sponsored by the AHC and the graduate school.

I have reviewed articles for the following journals: The Journal of the American Statistical Association, Bioinformatics, Nature, Nucleic Acids Research, Statistics in Medicine, PLoS Computational Biology, PLoS Genetics, Molecular Human Genetics, Nature Medicine, Clinical Trials and Genetics in Medicine.

I am a member of the editorial board for the BMC journals in the capacity as a statistical reviewer.

I am also a member of the editorial board of a new journal called "Statistical Communications in Infectious Diseases".

I currently chair 1 DSMB and serve on 4 other DSMBs.