Dr. Leif E. Peterson

Curriculum Vitae

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Experience Summary

- 7+ Years clinical trial data & safety monitoring board membership
- 15+ Years clinical trial design and analysis
- 15+ Years human subjects research board membership
- 15+ Years neural network algorithm development/programming
- 15+ Years machine learning algorithm development/programming
- 15+ Years text mining algorithm development/programming
- 20+ Years Monte Carlo simulation algorithm development/programming
- 25+ Years scientific/research personnel management
- 25+ Years clinical/laboratory study design and analysis
- 25+ Years statistical algorithm development/programming
- 900+ Lecture hours in graduate-level statistics
- 320+ Lecture hours in undergraduate-level statistics
- 100+ Peer-reviewed journal articles, 2 books, 3 monographs, 15 conference proceedings, 11 US Gov't reports, 6 software packages
- 20 NIH/DoD research grant review panels
- Chair of 4 conferences, Chair of 17 conference sessions, Member of 54 conference organizing/proceedings review committees
- Mentored 22 students

Research Interests

Mathematical algorithms, computational methods, including linear algebra, eigendecomposition, text mining, machine learning, network science, and numerical optimization.

Education

- Ph.D., Epidemiology-Biostatistics, University of Texas Health Science Center at Houston, 1994
- M.P.H., Radiological Physics, University of Michigan, Ann Arbor, 1986
- B.S., Nuclear Medicine, Ferris State University, Big Rapids (MI), 1981

Appointments & Employment

- 2019-Pres Principal, NXG Logic, LLC
- 2017-2019 Professor of Healthcare Policy and Research, Dept. of Healthcare Policy and Research, Weill Cornell Medical College, Cornell University
- 2016-2019 Professor of Bioinformatics and Biostatistics, Institute for Academic Medicine, Houston Methodist Research Institute
- 2014-2019 Associate Prof of Biostatistics, Institute of Academic Medicine, Houston Methodist Research Institute
- 2013-2019 Adjunct Associate Professor, Department of Neuroscience & Experimental Therapeutics. TAMU
- 2011-2019 Adjunct Associate Professor of Biostatistics, Division of Biostatistics, University of Texas, School of Public Health
- 2009-2019 Associate Professor of Public Health, Weill Cornell Medical College, Cornell University
- 2007-2019 Adjunct Associate Professor, Dept. of Medicine, Baylor College of Medicine
- 2006-2019 Biostatistician, Center for Biostatistics, Houston Methodist Research Institute
- 2004-2006 Associate Professor, Dept. Molec. and Human Genetics, Baylor College of Medicine (2nd appt)

- 2004-2006 Associate Professor, Department of Medicine, Baylor College of Medicine
- 2002-2003 Visiting Scientist, Lawrence Livermore National Laboratory
- 2000-2006 Assistant Professor, Dept. Molec. and Human Genetics, Baylor College of Medicine (2nd appt)
- 1999-2004 Expert Consultant, Space Radiation Health Initiative, National Aeronautics and Space Administration
- 1997-2005 Consultant, Science Advisory Board, Office of the Administrator, Environmental Protection Agency
- 1995-2004 Assistant Professor, Department of Medicine, Baylor College of Medicine (primary appt)
- 1986-1995 Shuttle Mission Radiation Specialist, Kelsey-Seybold Clinic, National Aeronautics and Space Administration
- 1985-1985 Graduate Intern, Radiation Physics, Sinai Hospital of Detroit
- 1984-1986 Assistant Physicist, Medical Nuclear Physics, Adult General Hospital, University of Michigan
- 1981-1981 Undergraduate Intern, Diagnostic Imaging and Nuclear Medicine, Sinai Hospital of Detroit

Military Service

- 1981-1981 USANG Officer Candidate School, McGhee-Tyson ANGB, Knoxville, TN
- 1981-1982 USAF Undergraduate Navigator Training, Mather AFB, Sacramento, CA
- 1982-1982 USAF Water Survival Training, Homestead AFB, Miami, FL
- 1982-1982 USAF Land Survival Training, Fairchild AFB, Spokane, WA
- 1982-1982 USAF Fighter Lead-In Flight Training, Holloman AFB, Alamogordo, NM
- 1983-1983 USANG Fighter-Bomber Flight Training, McConnell AFB, Wichita, KS
- 1983-1986 Fighter Pilot, 191st Fighter Interceptor Group, Selfridge ANGB, MI-ANG, Mt. Clemens, MI
- 1986-1995 Fighter Pilot, 147th Fighter Wing, Ellington Field, TX-ANG, Houston, TX

Security Clearances

- 1983-1995 Top Secret (Dept. of Defense)
- 1986-1995 Secret (NASA)

NIH/DoD Grant Review Panels

- NIAID Investigator Initiated Program Project Applications (P01): ZAI1-KJK-I-S2, 2020
- NIAID Nonhuman Primate (NHP) Radiation Survivor Cohort (RSC), Special Emphasis Panel: ZAI1-KJK-I-J1, 2019
- NIAID Centers for Radiation/Nuclear Predictive Biomarkers and Biodosimetric Devices(U19), ZAI1-LAR-I-C1(Sep), 2017
- NIAID Centers for Medical Countermeasures against Radiation Consortium (U19), ZAI-1 PA-I-M2(Mar), 2015
- NIAID Centers for Excellence in Translational Research (U19), ZAI1-LR-M-J1(May), 2013
- DOD Prostate Cancer Research Program (Jun) Molecular Biology & Genetics, 2008
- DOD Breast Cancer Research Program (Jun) Molecular Biology & Genetics, 2007
- DOD Prostate Cancer Research Program (Jun) Molecular Biology & Genetics, 2007
- DOD Prostate Cancer Research Program (Jun) Molecular Biology & Genetics, 2006
- NCI Special Emphasis Panel-Early Detection Research Network, Cancer Proteomics (Mar), 2005
- DOD Breast Cancer Research Program (Jun) Molecular Biology & Genetics, 2005
- NCI Special Emphasis Panel-Contracts for Russian Radioepidemiological Studies(Jun), 2004
- NCI Special Emphasis Panel-Early Detection Research Network, Cancer Proteomics (Jul), 2004
- NIH ZRG 1 SNEM-2(Mar) S. (Behavioral Genetics), 2003
- NIAMS Microarray Review (Aug), 2003
- NIH ZRG 1 SNEM-2(Feb) S. (Behavioral Genetics), 2002
- NIH ZRG 1 SNEM-2(Jul) S. (Behavioral Genetics), 2002
- NCI SPORE Review Panel (Oct), 2002
- NIH ZRG 1 SNEM-2(Oct) S. (Behavioral Genetics), 2001
- NIH ZRG 1 RAD(04) Radiation, 2001

Editorial Boards

- 2003-Pres Editorial Board Computer Methods and Programs in Biomedicine
- 2005-2019 Editorial Advisor BMC Genomics
- 2006-2020 Editor-in-Chief Source Code for Biology and Medicine

Honors & Awards

- 2000 Young Investigators Program Award, Health Effects of Former Soviet Union Nuclear Testing in Kazakhstan, National Research Council. Sponsored by National Academy of Sciences
- 1995 Program Scholar, Effects of Ionizing Radiation: Hiroshima and Nagasaki Atomic Bomb Survivors and Their Children, Sponsored by First Annual Schull Symposium
- 1992 Fellowship Award, 10th American Statistical Association Meeting on Radiation and Health, Sponsored by American Statistical Association
- 1990 Silver Snoopy Award, Computational methods for astronaut space and medical radiation exposure histories, National Aeronautics and Space Administration. Sponsored by Astronauts Personal Achievement Award
- 1989 Certificate of Recognition, Computational Methods for Estimating Tissue Doses in Diagnostic Radiology, US Food and Drug Administration. Sponsored by Center for Devices and Radiological Health

Society Membership

- 2004-2024 Senior Member, Institute of Electronic and Electrical Engineers (IEEE)
- 2009-2017 Member, International Neural Network Society
- 2004-2017 Member, Computational Intelligence Society (IEEE-CIS)
- 1988-2003 Member, Radiation Research Society
- 1984-1992 Member, Health Physics Society

Refereed Journal Articles

- 116. Ferrone, K.L., Willis, C.E., Guan, F., Ma, J., Peterson, L.E., Kry, S.F. Evaluating bone marrow dosimetry with the addition of bone marrow structures to the MIRD phantom. *Precision Radiation Oncology*. 2023: 1-9. DOI: 10.1002/pro6.1189.
- 115. Ferrone, K.L., Willis, C.E., Guan, F., Ma, J., Peterson, L.E., Kry, S.F. A Review of Magnetic Shielding Technology for Space Radiation. *Radiation*. 3: 46–57; 2023. DOI: 10.3390/radiation3010005.
- Peterson, L.E. Covid-19 and Flavonoids: In silico Molecular Dynamics Docking to the Active Catalytic Site of SARS-CoV and SARS-CoV-2 Main Protease. African J. Pharm. Sciences. 2(1):23–42; 2022.
- 113. Peterson, L.E. In Silico Molecular Dynamics Docking of Drugs to the Inhibitory Active Site of SARS-CoV-2 Protease and Their Predicted Toxicology and ADME. *African J. Pharm. Sciences.* 1(1):16–39; 2021.
- 112. Cathcart, S.J., Appel, S.H., Peterson, L.E., Greene, E.P., Powell, S.Z., Arumanayagam, A.S., Rivera, A.L., and Cykowski, M.D. 2021. Fast progression in amyotrophic lateral sclerosis is associated with greater TDP-43 burden in spinal cord. J. Neuropathol. Exp. Neurol. 80(8):754–763; 2021.
- 111. Regnier-Golanov, A.S., Dündar, F., Zumbo, P., Betel, D., Hernandez, M.S., Peterson, L.E., Lo, E.H., Golanov, E.V., Britz, G. Hippocampal Transcriptome Changes after Subarachnoid Hemorrhage in Mice. *Frontiers in Neurology*. 12:1134; 2021.
- Ferrone, K.L., Guan, F, Ma, J., Peterson, L.E., Willis, C.E., Kry, S.F. Reducing space radiation cancer risk with magnetic shielding. Advances in Space Research. 68(1):153–160; 2021.
- 109. Lador, A., Peterson, L.E., Swarup, V., Schurmann, P.A., Makkar, A., Doshi, R.N., DeLurgio, D., Athill, C.A., Ellenbogen, K.A., Natale, A., Koneru, J., Dave, A.S., Giorgberidze, I., Afshar, H., Guthrie, M.L., Bunge, R., Morillo, C.A., Kleiman, N.S., Valderrábano, M. Determinants of outcome impact of Vein of Marshall Ethanol infusion when added to catheter ablation of persistent atrial fibrillation: A secondary analysis of the VENUS randomized clinical trial. *Heart Rhythm.* 18(7):1045–1054; 2021.
- 108. Valderrábano, M., Peterson, L.E., Swarup, V., Schurmann, P.A., Makkar, A., Doshi, R.N., DeLurgio, D., Athill, C.A., Ellenbogen, K.A., Natale, A., Koneru, J., Dave, A.S., Giorgberidze, I., Afshar, H., Guthrie, M.L., Bunge, R., Morillo, C.A., Kleiman, N.S. Effect of Catheter Ablation With Vein of Marshall Ethanol Infusion vs Catheter Ablation Alone on Persistent Atrial Fibrillation - The VENUS Randomized Clinical Trial. J. Am. Med. Assoc. 324(16):1620–1628; 2020.

- 107. Vera, A.M., Barrera, B.D., Peterson, L.E., Yetter, T.R., Dong, D., Delgado, D.A., McCulloch, P.C., Varner, K.E., Harris, J. D. An Injury Prevention Program for Professional Ballet: A Randomized Controlled Investigation. Orthopaedic J. Sports Medicine. 8(7):1–12; 2020.
- 106. Lubega, J., Hallman, M.D., Lupo, P.J., Fu, Y., Peterson L.E., Scheurer, M.E. Association of population mixing and acute lymphocytic leukemia in children and young adults. *Cancer Epidemiol.* 66:101722; 2020.
- 105. Vera, A.M., Peterson, L.E., Dong, D., Haghshenas, V., Yetter, T.R., Delgado, D.A., McCulloch, P.C., Varner, K.E., Harris, J.D. High Prevalence of Connective Tissue Gene Variants in Professional Ballet. Am. J. Sports Med. 48(1):222– 228; 2019.
- 104. Peterson, L.E., Kovyrshina, T. DNA Repair Gene Expression Adjusted by the PCNA Metagene Predicts Survival in Multiple Cancers. Cancers. 11(4), 501; 2019.
- 103. Sochacki, K.R., Dong, D., Peterson, L.E., McCulloch, P.C., Lisman, K., Harris, J.D. Overnight call is associated with poor resting heart rate and heart rate variability in orthopaedic surgeons. J. ISAKOS: Joint Disorders & Orth. Sports Medicine. 4:123–126; 2019.
- 102. Peterson L.E. Small Molecule Docking of DNA Repair Proteins Associated with Cancer Survival Following PCNA Metagene Adjustment: A Potential Novel Class of Repair Inhibitors. *Molecules*. 24(3):645–666; 2019.
- 101. Valderrábano, M., Peterson, L.E., Bunge R, Prystash, M., Dave, A.S., Nagueh, S., Kleiman, N.S. Vein of Marshall ethanol infusion for persistent atrial fibrillation: VENUS and MARS clinical trial design. Am. Heart J. 215:52–61; 2019.
- 100. Rehman, H., Reardon, M., Kleiman, N., Peterson, L.E., Kalra, A. Balloon Predilation in Transcatheter Aortic Valve Replacement with Self-Expanding Valves. *Structural Heart.* 3(1):65–71; 2019.
- Zhang, M., Suarez, E., Vasquez, J.L., Nathanson, L., Peterson, L.E., Rajapakshe, K., Basil, P., Weigel, N.L., Coarfa, C., Agoulnik, I.U. Inositol polyphosphate 4-phosphatase type II regulation of androgen receptor activity. *Oncogene*. 38:1121–1135; 2019.
- Sochacki, K.R., Dong, D., Peterson, L.E., McCulloch, P.C., Harris, J.D. The Measurement of Orthopaedic Surgeon Quality and Quantity of Sleep Using a Validated Wearable Device. J. Am. Acad. Orthop. Surg. Glob. Res. Rev. 2(10):e065; 2018.
- 97. Phillips, R.A., Xu, J., Peterson, L.E., Arnold R.M., Diamond, J.A., Schussheim, A.E. Impact of Cardiovascular Risk on the Relative Benefit and Harm of Intensive Treatment of Hypertension. J. Am. Coll. Cardiol. 71(15):1601–1610; 2018.
- 96. Peterson, L.E., Kovyrshina, T. Progression Inference for Somatic Mutations in Cancer. Heliyon. 33:e00277; 2017.
- Cykowski, M.D., Powell, S.Z., Peterson, L.E., Appel, J.W., Rivera, A., Takei, H., Chang, E., and Appel, S.H. Clinical Significance of TDP-43 Neuropathology in Amyotrophic Lateral Sclerosis. J. Neuropathol. Exp. Neurol. 76(5):402–413; 2017.
- 94. Edmondson, D.A., Karski, E.E., Kohlgruber, A., Koneru, H., Matthay, K.K., Allen, M., Hartman, C.L., Peterson, L.E., DuBois, S.G., Coleman, M.A. Transcript analysis for internal biodosimetry using peripheral blood from neuroblastoma patients treated with (131)I-mIBG, a targeted radionuclide. *Radiat. Research.* 186(3):235–244; 2016.
- 93. Sridharan, D., Asaithamby, A., Blattnig, S., Costes, S., Doetsch, P., Dynan, W., Hahnfeldt, P., Hlatky, L., Kidane, Y., Kronenberg, A., Naidu, M., Peterson, L.E., Plante, I., Ponomarev, A., Saha. J., Snijders, A., Werner, E., Pluth, J.M. Evaluating Biomarkers to Model Cancer Risk Post Cosmic Ray Exposure. *Life Sciences in Space Research*. 9:19–47; 2016.
- 92. Whiddon, A.R., Dawson, K.L., Fuentes, A., Perez, K.K., Peterson, L.E., Kaleekal, T. Post-operative antimicrobials after lung transplantation and the development of multidrug resistant bacterial and Clostridium difficile infection: an analysis of 500 non-cystic fibrosis lung transplant patients. *Clin. Transplant.* 30(7):767–773; 2016.
- 91. Lopez, S.M., Agoulnik, A.I., Peterson, L.E., Suarez, E., Gandarillas, G.A., Frolov, A., Li, R., Rajapakshe, K., Coarfa, C., Ittmann, M.M., Weigel, N.L., Agoulnik, I.U. Nuclear Receptor Corepressor 1 expression and output declines with prostate cancer progression, CCR-15-1983R1. *Clin. Cancer Res.* 22(15):3937–3949; 2016.
- Nabi, F., Kassi, M., Muhyieddeen, K., Chang, S.M., Xu, S., Peterson, L.E., Wray, N.P., Shirkey, B.A., Ashton, C.M., Mahmarian, J.J. Optimizing Evaluation of Patients with Low-to-Intermediate Risk Acute Chest Pain: A Randomized Study Comparing Stress Myocardial Perfusion Tomography Incorporating Stress-only Imaging to Cardiac CT. J. Nucl. Med. 57:378–384; 2016.
- Peterson, L.E., Kovyrshina, T. Adjustment of Lifetime Risks of Space Radiation-Induced Cancer by the Healthy Worker Effect and Cancer Misclassification. *Heliyon.* e00048; 2015.
- Salazar, K.L, Zhou, H., Xu, J., Peterson, L.E., Schwartz, M.R., Mody, D.R., Ge, Y. Multiple human papilloma virus infections and impact on the development of high risk cervical lesions. *Acta Cytologica*. 59(5):391–398; 2015.
- Higgins, C.L., Isbilir, S., Basto, P., Chen, I.Y., Vaduganathan, M., Vaduganathan, P., Reardon, M.J., Lawrie, G., Peterson, L.E., Morrisett, J.D. Distribution of alkaline phosphatase, osteopontin, RANK ligand and osteoprotegerin in calcified human carotid atheroma. *Protein Journal*. 34(5):315–328; 2015.

- Coleman, M.A., Sasi, S.P., Onufrak, J., Natarajan, M., Manickam, K., Schwab, J., Muralidharan, S. Peterson, L.E., Alekseyev, Y., Yan, X., Goukassian, D. Low Dose Radiation Affects Cardiac Physiology: Gene Networks and Molecular Signaling in Cardiomyocytes. *Heart and Circulatory Physiology*. 309(11):H1947–1963; 2015.
- Ghebremariam Y.T., Cooke, J.P., Gerhart, W., Griego, C., Brower, J.B., Doyle-Eisele, M., Moeller, B.C., Zhou, Q., Ho, L., de Andrade, J., Raghu, G., Peterson, L.E., Rivera, A., Rosen, G.D. Pleiotropic effect of the proton pump inhibitor esomeprazole leading to suppression of lung inflammation and fibrosis. J. Transl. Med. 13(1):249; 2015.
- 84. Mahmarian, J.J., Peterson, L.E., Xu, J., Cerqueira, M.D., Iskandrian, A.E., Bateman, T.M., Thomas, G.S., Nabi, F. Regadenoson provides perfusion results comparable to adenosine in heterogeneous patient populations: A quantitative analysis from the ADVANCE MPI trials. J. Nucl. Cardiol. 22(2):248–261; 2015.
- 83. Yin, Z., Deng, T., Peterson, L.E., Yu, R., Lin, J., Hamilton, D.J., Reardon, P.R., Sherman, V., Winnier, G.E., Zhan, M., Lyon, C.J., Wong S.T., Hsueh, W.A. Transcriptome analysis of human adipocytes implicates the NOD-like receptor pathway in obesity-induced adipose inflammation. *Mol. Cellular Endocrinol.* 394(1-2):80–87; 2014.
- Peterson, L.E. Superresolution MUSIC based on Marcenko-Pastur limit distribution reduces uncertainty and improves DNA gene expression-based microarray classification. LNCS. 8452:191–209; 2014.
- Perez, K.K., Olsen, R.J., Musick, W.L., Cernoch, P.L., Davis, J.R., Peterson, L.E., Musser, J.M. Integrating rapid diagnostics and antimicrobial stewardship improves outcomes in patients with antibiotic-resistant gram-negative bacteremia. J. Infect. 69(3):216–225; 2014.
- Thomas, A., Peterson, L.E. Reduction of costs for anemia-management drugs associated with the use of ferric citrate. Int. J. Nephrol. Renovasc. Dis. 7:191–201; 2014.
- Gupte, A.A., Hamilton, D.J., Cordero-Reyes, A.M., Youker, K.A., Yin, Z., Estep, J.D., Stevens, R.D., Wenner, B., Ilkayeva, O., Loebe, M., Peterson, L.E., Lyon, C.J., Wong, S., Newgard, C.B., Torre-Amione, G., Taegtmeyer, H., Hsueh, W.A. Mechanical unloading promotes myocardial energy recovery in human heart failure. *Circulation Cardiovascular Genetics.* 7(3):266–276; 2014.
- Sonpavde, G., Wang, M., Peterson, L.E., Wang, H.Y., Joe, T., Mims, M.P., Kadmon, D., Ittmann, M.M. Wheeler, T.M., Gee, A.P., Wang, R.F., Hayes, T.G. HLA-restricted NY-ESO-1 peptide immunotherapy for metastatic castration resistant prostate cancer. *Investigational New Drugs*. 32(2):235–242; 2014.
- Peterson, L.E., Ford, C.E. Random matrix theory and covariance matrix filtering for cancer gene expression. LNCS. 7845:173–184; 2013.
- 76. Kim, D., Marchetti, F., Chen, Z., Zaric, S., Wilson, R.J., Hall, D.A., Gaster, R.S., Lee, J-R, Wang, J., Osterfeld, S.J., Yu, H., White, R.M., Blakely, W.F., Peterson, L.E., Bhatnagar, S., Manion, B., Tseng, S., Roth, K., Coleman, M.A., Snijders, A.M., Wyrobek, A.J., Wang, S.X. Nanosensor biodosimetry of mouse blood proteins after exposure to ionizing radiation. *Scientific Reports (Nature)*. 3(2234):1–8; 2013.
- Ducharme, N.A., Peterson, L.E., Benfenati, E., Reif, D., McCollum, C.W., Gustafsson, J-A, Bondesson, M. Meta-analysis of toxicity and teratogenicity of 133 chemicals from zebrafish developmental toxicity studies. *Reproductive Toxicology*. S0890-6238(13):204–209; 2013.
- Perez, K.K., Olsen, R.J., Musick, W.L., Cernoch, P.L., Davis, J.R., Land, G.A., Peterson, L.E., Musser, J.M. Integrating rapid pathogen identification and antimicrobial stewardship significantly decreases hospital costs. *Arch. Path. Lab. Med.* 137(9):1247–1254; 2013.
- 73. Budworth, H., Snijders, A.M., Marchetti, F., Mannion, B., Bhatnagar, S., Kwoh, E., Tan, Y., Wang, S.X., Blakely, W.F., Coleman, M., Peterson, L.E., Wyrobek, A.J. DNA repair and cell cycle biomarkers of radiation exposure and inflammation stress in human blood. *PLoS One.* 7(11):e48619; 2012.
- 72. Xu, J., Lee, E.T., Peterson, L.E., Devereux, R.B., Rhoades, E.R., Umans, J.G., Best, L.G., Howard, W.J., Paranilam, J., Howard, B.V. Differences in risk factors for coronary heart disease among diabetic and nondiabetic individuals from a population with high rates of diabetes: the Strong Heart Study. J. Clin. Endocrinol. Metab. 97(10):3766–3774; 2012.
- Chylack, L.T. Jr., Feiveson, A.H., Peterson, L.E., Tung, W.H., Wear, M.L., Marak, L.J., Hardy, D.S., Chappell, L.J., Cucinotta, F.A. NASCA Report 2: Longitudinal study of relationship of exposure to space radiation and risk of lens opacity. *Radiat. Res.* 178(1):25–32; 2012.
- Carroll, R.K., Beres, S.B., Sitkiewicz, I., Peterson, L.E., Matsunami, R.K., Engler, D.A., Flores, A.R., Sumby, P., Musser, J.M. Evolution of diversity in epidemics revealed by analysis of the human bacterial pathogen group A Streptococcus. *Epidemics*. 3(3-4):159–170; 2011.
- Monzon, F.A., Alvarez, K., Peterson, L.E., Truong, L., Amato, R.J., Hernandez-McClain, J., Tannir, N., Parwani, A.V., Jonasch, E. Chromosome 14q loss defines a molecular subtype of clear-cell renal cell carcinoma associated with poor prognosis. *Modern Pathol.* 24(11):1470–1479; 2011.
- Kim, Y.S., Rubio, V., Qi, J., Xia, R., Shi, Z.Z., Peterson, L.E., Tung, C.H., O'Neill, B.E. Cancer treatment using an optically inert Rose Bengal derivative combined with pulsed focused ultrasound. J. Controlled Release. 156(3):315–322; 2011.

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- Grumelli, S., Lu, B., Peterson, L.E., Maeno, T., Gerard, C. CD46 protects against chronic obstructive pulmonary disease. *PLoS One.* 6(5):e18785; 2011.
- Ather, S., Peterson, L.E., Divakaran, V.G., Deswal, A., Ramasubbu, K., Giorgberidze, I., Blaustein, A., Wehrens, X.H.T., Mann, D.L., Bozkurt, B. Digoxin treatment in heart failure - Unveiling risk by cluster analysis of DIG data. *Int. J. Cardiol.* 150(3):264–269; 2011.
- 64. Peterson, L.E. Covariance matrix self-adaptation evolution strategies and other metaheuristic techniques for neural adaptive learning. Soft Computing (Springer). 15(8):1483–1495; 2011.
- 63. Alvarez, K., Kash, S.F., Lyons-Weiler, M.A., Kim, H-J., Peterson, L.E., Mathai, B., Hagenkord, J.M., Monzon, F.A. Reproducibility and performance of virtual karyotyping with SNP microarrays for the detection of chromosomal imbalances in formalin-fixed paraffin embedded tissues. *Diagnostic Molecular Pathology*. 19(3):127–134; 2010.
- Nabi, F, Chang, S-M, Pratt, C.M., Paranilam, J., Peterson, L.E., Frias, M.E., Mahmarian, J.J. Coronary Artery Calcium Scoring in the Emergency Department: Identifying which patients with chest pain can be safely discharged home. Annals of Emergency Medicine. 56(3):220–229; 2010.
- Chiu, D., Peterson, L.E., Elkind, M.S.V., Rosand, J., L.M. Gerber, Silverstein, M.D. Glycine Antagonist in Neuroprotection(GAIN) Americas Trial Investigators. Comparison of outcomes after intracerebral hemorrhage and ischemic stroke. Int. J. Stroke and Cerebrovascular Dis. 19(3):225–229; 2010.
- Chang, S.M., Nabi, F., Xu, J., Peterson, L.E., Achari, A., Pratt, C.M., Mahmarian, J.J. The coronary artery calcium score and stress myocardial perfusion imaging provide independent and complementary prediction of cardiac risk. J. Am. Coll. Cardiol. 54(20):1872–1882; 2009.
- 59. Peterson, L.E., Chen, X-W. Machine learning in biomedicine and bioinformatics. Int. J. Data Mining and Bioinformatics. 3(4):363–4; 2009.
- 58. Peterson, L.E., Lisboa, P.J.G. Biopattern analysis using machine learning methods. Int. J. Knowledge Engineering and Soft Data Paradigms. 1(3):193–194; 2009.
- 57. Peterson, L.E., Coleman, M.A. Logistic ensembles of random spherical linear oracles for microarray classification. Int. J. Data Mining and Bioinformatics. 3(4):382–397; 2009.
- Peterson, L.E., Larin, K.V. Image classification of artificial fingerprints using Gabor wavelet edge detection, selforganizing maps, and Hermite/Laguerre neural networks. Int. J. Knowledge Engineering and Soft Data Paradigms. 1(3):239-256; 2009.
- Chylack L.T., Jr, Peterson L.E., Feiveson, A.H., Wear, M.L., Manuel, F.K., Tung, W.H., Hardy, D., Marak, L., Cucinotta, F.A. NASA Study of Cataract in Astronauts (NASCA). Report 1: Cross-sectional study of the relationship of exposure to space radiation and risk of lens opacity. *Radiat. Res.* 172(1):10–20; 2009.
- 54. Kurt, M., Shaikh, K.A., Peterson, L.E., Kurrelmeyer, K.M., Shah, G., Nagueh, S.F., Fromm, R., Quinones, M.A., Zoghbi, W.A. Impact of contrast echocardiography on evaluation of ventricular function and clinical management in a large prospective cohort. J. Am. Coll. Cardiol. 53(9):802–810; 2009.
- 53. Peterson, L.E., K-Nearest Neighbor. Scholarpedia. 4(2):1883; 2009.
- Shaikh, K.A., Chang, S.M., Peterson, L.E., Rosendahl-Garcia, K., Quinones, M.A., Nagueh, S.F., Kurrelmeyer, K., Zoghbi, W.A. Safety of contrast administration for endocardial enhancement during stress echocardiography compared with noncontrast stress. Am. J. Cardiol. 102(11):1444–1450; 2008.
- Hagenkord, J.M., Parwani, A.V., Lyons-Weiler, M.A., Alvarez, K., Amato, R., Gatalica, Z., Gonzalez-Berjon, J.M., Peterson, L.E., Dhir, R., Monzon, F.A. Virtual karyotyping with SNP microarrays reduces uncertainty in the diagnosis of renal epithelial tumors. *Diagnostic Pathology*. 3(44):1–13; 2008
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- 3. Peterson, L.E. Skewness and Kurtosis of 18 Simulated Probability Distributions with Varying Sample Size and Scale. SSRN, 2019. https://papers.srn.com/sol3/papers.cfm?abstract_id=4277814.
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- 3. ChipST2C: Gene expression cluster and statistical analysis. https://www.nxglogic.com
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- 6. **PIRLS:** Poisson iteratively reweighted least squares computer program for additive, multiplicative, power, and non-linear models. J. Stat. Software. 2(5):i05; 1997.

Undergraduate Lecturing

- 2023 STAT-385: Spring Methods for Data Analysis and System Optimization, Department of Statistics, Rice University
- 2023 STAT-305: Spring Introduction to Statistics for Biosciences, Department of Statistics, Rice University
- 2023 STAT-280: Spring Elementary Applied Statistics, Department of Statistics, Rice University
- 2022 STAT-305: Fall Introduction to Statistics for Biosciences, Department of Statistics, Rice University
- 2022 STAT-280: Fall Elementary Applied Statistics, Department of Statistics, Rice University
- 2022 STAT-305: Fall Introduction to Statistics for Biosciences, Department of Statistics, Rice University

Graduate Lecturing

- 2016 PH-9997: Practicum in Biostatistics (Student: Zhe Dong), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston
- 2015 PH-1690: Foundations of Biostatistics (Primary Instructor), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston

- 2015 PH-1700: Intermediate Biostatistics (Primary Instructor), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston
- 2015 PH-9997: Practicum in Biostatistics (Student: Maxine Olefsky), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston
- 2015 PH-1997: Individual Study in Biostatistics (Student: Ming Yang), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston
- 2015 PH-1700: Intermediate Biostatistics (Primary Instructor), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston
- 2014 PH-1700: Intermediate Biostatistics (Primary Instructor), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston
- 2014 PH-1998: Data Mining Methodology (Primary Instructor), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston
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- 2013 PH-1690: Foundations of Biostatistics (Primary Instructor), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston
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- 2011 PH-1700: Intermediate Biostatistics (Primary Instructor), Department of Biostatistics, School of Public Health, University of Texas, Health Science Center at Houston
- 2008 5310: Fundamentals of Biostatistics & Data Management (Primary Instructor) College of Technology, Univ. of Houston
- 2007 Primer of Statistics for Computer Science Students (Invited speaker) Dept. of Computer Science, Univ. of Houston
- 2007 Machine Learning and Computational Intelligence (Invited speaker) Department of Computer Science, Univ. of Houston
- 2004 Research Methods Course (Instructor), Allied Health Program, 15 hours, Block 4 Dept. of Medicine, Baylor College of Medicine
- 2001-2002 Quantitative Genetics (Primary Instructor), Graduate School of Biomedical Sciences, 15 hours, Block 4, Dept. of Molecular & Human Genetics Medicine, Baylor College of Medicine

Student Mentoring

- 22. 2016-2020 Doctoral Candidacy Committee, Kristine Ferrone, Medical Physics Dept., University of Texas, Graduate School of Biomedical Sciences, U.T.-M.D. Anderson Cancer Center.
- 21. 2018 Dissertation Reviewer, Marco Notaro, Dept. of Computer Science, University of Milan, Italy. "Hierarchical Ensemble Methods for Ontology-based Predictions in Computational Biology."
- 20. 2015 Practicum in Biostatistics, Maxine Olefsky, M.S. Student in Biostatistics, Dept. of Biostatistics, University of Texas, School of Public Health
- 2013-2016 Doctoral Candidacy Committee, Texas A & M University M.D./Ph.D. Program, Ricky Savjani, "Decoding Visual and Sensory Processing via Human functional MRI and Human Deep Brain Recordings." Dept. of Neuroscience, Baylor College of Medicine
- 2013-2014 Master Thesis Committee, Univ. of Texas, School of Public Health, Tatiana Kovyrshina "Molecular Pathway Activation in Cancer and Tissue Following Space Radiation Exposure."
- 17. 2013-2014 Master Thesis Committee, Univ. of Texas, School of Public Health, Joseph Lubega, M.D. "Trends of Childhood Acute Lymphocytic Leukemia and Population Mixing in the State of Texas"
- 2013-2014 PhD/DSc Committee for Computer Science, Machine Intelligence Unit, Indian Statistical Institute, Kolkata. (Ph.D. Student: Ranajit Das) "Some Issues in Gene Regulation and Evaluation"). Supervisor: Prof. Sushmita Mitra, MIU, ISI Kolkata.

- 15. 2013 Yeming (Alex) Ge, B.A., Columbia University, The Methodist Hospital Research Institute summer student, Applied Mathematics.
- 14. 2011-2012 Vittorio Fortino, M.S., Doctoral student in Systems Biology at University of Salerno, IT and Visiting Research Fellow at TMHRI.
- 13. 2011 Dillon Nguyen, B.S. University of Houston, The Methodist Hospital Research Institute summer student, Pre-Med.
- 12. 2011 Liang Gu, B.S. Northwestern University, The Methodist Hospital Research Institute summer student, Pre-Med.
- 11. 2009 Shaun Khan, B.E. University of Houston, The Methodist Hospital Research Institute summer student, Bioengineering.
- 2007-2009 Doctoral Candidacy Committee, Graduate School of Biomedical Sciences, Baylor College of Medicine (Ph.D. Student: Vijay Nambi, M.D., Ballantyne Lab, Dept. of Medicine).
- 2007-2009 Madhuri Vasudevan, M.D., M.P.H., "The Effect of Diet-Induced Weight Loss on HDL Functionality: Investigating Changes in Reverse Cholesterol Transport." Clinical Endocrinology and Atherosclerosis Fellow, Center for Cardiovascular Disease Prevention, Dept. of Medicine, Baylor College of Medicine.
- 8. 2005-2008 Doctoral Candidacy Committee, Graduate School of Biomedical Sciences, Baylor College of Medicine (Ph.D. Student: Victor D. Acevedo, Spencer Lab, Dept. of Immunology).
- 2005-2007 Doctoral Candidacy Committee, Graduate School of Biomedical Sciences, Baylor College of Medicine (Ph.D. Student: Daniel Amador, Darlington Lab, Dept. of Medicine).
- 6. 2004-2005 Doctoral Candidacy Committee, Graduate School of Biomedical Sciences, Baylor College of Medicine (Ph.D. Student: Divy Khurana, Cai Lab, Dept. of Molec. and Human Genetics).
- 5. 2004 Master's Thesis Committee, Graduate School of Biomedical Sciences, Baylor College of Medicine (M.S. Student: Christine Millare).
- 4. 2003 Herb Singh, M.D., "Gene expression profiling of prostate cancer and stromal invasion." Scott Dept. of Urology Fellow, Baylor College of Medicine.
- 3. 2001 Doctoral Candidacy Committee, Graduate School of Biomedical Sciences, University of Texas Health Science Center at Houston (Dr. Hui Xu, John Clifford Lab, UTMDACC).
- 2. 2000 Master's Thesis Committee, UT School of Public Health, University of Texas Health Science Center at Houston (Dr. Irina Volguina).
- 1. 2000-2001 IAEA Fellowship (Dr. Zhanat Abylkassimova, Semipalatinsk, Kazakhstan). International Atomic Energy Agency, Dept. of Medicine, Baylor College of Medicine

Institutional Committees

- 1990-1995 Medical Isotopes Operations Subcommittee of the Lyndon B. Johnson Space Center Radiation Safety Committee, National Aeronautics and Space Administration, Houston, TX
- 1992-1995 Astronaut Radiation Constraints Panel, Lyndon B. Johnson Space Center, National Aeronautics and Space Administration, Houston, Texas
- 1992-1995 Radiation Safety Committee, Lyndon B. Johnson Space Center, National Aeronautics and Space Administration, Houston, TX
- 1993-1995 Human Research Policy and Procedures Committee, Lyndon B. Johnson Space Center, National Aeronautics and Space Administration, Houston, TX
- 1995-1996 Organizing Committee of the First Annual Schull International Symposium William J. Schull Institute, Houston, TX
- 1997-1998 Uncertainty in Radiogenic Risks Subcommittee (URRS), U.S. Environmental Protection Agency, Washington, DC
- 2000-2011 Organizing Committee, NASA Space Radiation Modeling Workshop National Aeronautics and Space Administration, Houston, TX
- 2000-2006 Institutional Review Board(3), Baylor College of Medicine, Houston, TX
- 2000-2001 Patent and Copyright Committee, Baylor College of Medicine, Houston, TX
- 2003-2004 Prostate Cancer Gene Therapy Working Group, Baylor College of Medicine, Houston, TX
- 2004-2005 Prostate Cancer Screening Working Group, Baylor College of Medicine, Houston, TX
- 2006-2019 Institutional Review Board, Houston Methodist Research Institute, Houston, TX
- 2010-2012 NASA Lung Cancer Consortium External Advisory Committee
- 2014-2017 Biostatistics Student Selection/Exemption Committee UTSPH
- 2014-2018 Advisory Panel, Radiation and Public Health Project

International Conference and Society Leadership

- Conference Chair First Industrial Conference on Artificial Intelligence and Health (ICAIH19)
- Session Chair Fast and Efficient Solutions for Computational Intelligence Methods in Bioinformatics, Systems and Computational Biology, Fifteenth International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB18)
- General Chair Fourteenth International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB17)
- Session Chair Machine Learning for Enhancing Biomedical Data Analysis, 2017 International Joint Conference on Artificial Neural Networks (IJCNN 17)
- Session Chair Computational Biostatistics for Data Integration in Systems Biomedicine, Eleventh International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB14)
- General Chair Ninth International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB12)
- Session Chair Intelligent Clinical Decision Support Systems (i-CDSS), Seventh International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB11)
- Session Chair Machine Learning and Computational Intelligence in Biomedicine (MLCIB10) The Eighth Annual IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB11)
- Track Chair Computational Intelligence for Biopattern Data Analysis, 2010 International Joint Conference on Neural Networks (IJCNN10)
- Session Chair Computational Intelligence for Biopattern Data Analysis, 2010 International Joint Conference on Neural Networks (IJCNN10)
- Session Chair Computational Intelligence for Biopattern Data Analysis: Bioinformatics I, 2010 International Joint Conference on Neural Networks (IJCNN10)
- Session Chair Computational Intelligence for Biopattern Data Analysis: Bioinformatics II, 2010 International Joint Conference on Neural Networks (IJCNN10)
- Session Chair Computational Intelligence for Biopattern Data Analysis: Bioinformatics III, 2010 International Joint Conference on Neural Networks (IJCNN10)
- Session Chair Intelligent Clinical Decision Support Systems (i-CDSS), Seventh International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB10)
- General Chair Sixth International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB09)
- Session Chair Diagnosis, Prognosis, and Survival Analysis with Biopatterns using Machine Learning Methods Eighth International Conference on Machine Learning and Applications (ICMLA 2009)
- Session Chair From Desktop to Bedside Computational Intelligence for Biopattern, 2009 International Joint Conference on Neural Networks (IJCNN09)
- Chair Houston-Area Chapter, IEEE Computational Intelligence Society, 2008
- Session Chair Application of Machine Learning in Constructing Biopatterns and Analyzing Bioprofiles Seventh International Conference on Machine Learning and Applications (ICMLA08)
- Area Chair Bioinformatics and Medical Applications 7th Mexican International Conference on Artificial Intelligence (MICAI08)
- Session Chair Analysis of High Dimensional Data in Bioinformatics, 2008 International Joint Conference on Neural Networks (IJCNN08)
- Co-Chair Workshop on Machine Learning in Biomedicine and Bioinformatics (MLBB07) of the Sixth International Conference on Machine Learning and Applications (ICMLA07)
- Session Chair Neural Network Applications in Bioinformatics, 2007 International Joint Conference on Neural Networks (IJCNN07)
- Vice Chair Houston-Area Chapter, IEEE Computational Intelligence Society, 2007
- Chair Houston-Area Chapter, IEEE Computational Intelligence Society, 2006

International Conference/Steering Committees

- Technical Program Committee 2022 World Congress on Computational Intelligence (WCCI22)
- Technical Program Committee 2021 International Joint Conference on Neural Networks (IJCNN21)
- Technical Program Committee 2020 International Joint Conference on Neural Networks (IJCNN20)
- Steering Committee 15th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB19)
- Steering Committee 15th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB18)

- Program Committee 2017 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB2017)
- Steering Committee 14th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB17)
- Steering Committee International Conference on Big Data Analytics and Computational Intelligence(ICBDACI2017)
- Steering Committee 13th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB16)
- International Program Committee 18th International Conference on Enterprise Information Systems (ICEIS2015)
- Steering Committee 12th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB15)
- International Program Committee 2015 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB 2015)
- International Program Committee International Joint Conference on Neural Networks (IJCNN15)
- International Program Committee 17th International Conference on Enterprise Information Systems (ICEIS 2015)
- Steering Committee 1st International Conference on Contemporary Computing and Informatics (ICI3I14)
- Steering Committee 11th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB14)
- International Scientific Committee Genoa Bioinformatics Workshop, Interacting proteins: a computational intelligence challenge, 2013-06-14, Sala conferenze DIBRIS-Valletta Puggia, Via Dodecaneso, 35 Genova, Italy,2013
- International Program Committee The Second International Conference on Intelligent Systems and Applications IN-TELLI13
- Steering Committee 10th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB13)
- International Program Committee 14th International Conference on Enterprise Information Systems (ICEIS12)
- Scientific Committee 8th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB11)
- International Program Committee Healthcare Informatics, Imaging, and Systems Biology (HISB11)
- Technical Program Committee The Third International Conferences on Pervasive Patterns and Applications (PAT-TERNS 2011)
- International Program Committee 4th International Conference on Pattern Recognition and Machine Intelligence (PReMI11)
- International Program Committee 12th International Conference on Enterprise Information Systems (ICEIS11)
- Scientific Committee 7th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB10)
- International Program Committee 3rd International Conference on Agents and Artificial Intelligence (ICAART10)
- International Program Committee 12th International Conference on Enterprise Information Systems (ICEIS2010)
- Member, Technical Committee on Machine Learning, IEEE Systems, Man, and Cybernetics Society (2009)
- Member, Technical Committee on Computational Intelligence, IEEE Systems, Man, and Cybernetics Society (2009)
- International Program Committee Bioinformatics and Medical Applications track, 8th Mexican International Conference on Artificial Intelligence (MICAI 2009)
- International Program Committee Intelligent Systems for Medical Decision Support (ISMDS 2009)
- International Program Committee International Conference on Soft Computing and Pattern Recognition (SoCPaR 2009)
- International Program Committee World Congress on Nature and Biologically Inspired Computing (NaBIC 2009)
- International Program Committee International Conference on Agents and Artificial Intelligence (ICAART 2009)
- International Program Committee International Conference on Bio-inspired Systems and Signal Processing (BIOSIG-NALS 2009)
- International Program Committee International Conference on Health Informatics (HEALTHINF 2009)
- International Program Committee Workshop on Supervised and Unsupervised Ensemble Methods and Their Applications (SUEMA 2008), of the European Conference on Artificial Intelligence (ECAI 2008)
- International Program Committee 11th International Conference on Enterprise Information Systems(ICEIS 2009) International Program Committee Intelligent Systems for Medical Decisions Support (ISMDS 2008)
- International Program Committee Fifth International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB08)
- Organizing Committee 7th International Conference on Machine Learning and Applications (ICMLA08)
- International Program Committee 2008 IEEE World Congress on Computational Intelligence (WCCI 2008)
- International Program Committee 10th International Conference on Enterprise Information Systems(ICEIS 2008)
- International Program Committee International Conference on Bio-inspired Systems and Signal Processing (BIOSIG-NALS 2008)

- International Program Committee International Conference on Health Informatics (HEALTHINF 2008)
- International Program Committee 6th International Conference on Machine Learning and Applications (ICMLA07)
- International Program Committee Post-IJCNN Workshop on Computational Intelligence Approaches for the Analysis of Bioinformatics Data (CIBIO07)
- International Program Committee Fourth International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB07)
- International Program Committee Bioinformatics, Machine Learning, Statistics EUROCON 2007 IEEE International Conference on Computer as Tool (EUROCON07)
- International Program Committee First IEEE Symposium on Foundations of Computational Intelligence (FOCI07)
- International Program Committee 2007 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB07)
- International Program Committee 2006 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB06)
- International Program Committee Third International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB06)
- International Program Committee 2006 IEEE World Congress on Computational Intelligence(WCCI06)-International Joint Conference on Neural Networks (IJCNN06)