

University of California, San Francisco

Curriculum Vitae

Name: **Roberta L Bruhn**

Position: Co-Director, Epidemiology Core
Staff Scientist II, Epidemiology Core
Blood Systems Research Institute

Address: 270 Masonic Avenue
San Francisco CA 94118, USA
Voice: (415) 923-5771 Ext. 189
FAX: (415) 901-0733
Email: RBruhn@bloodsystems.org

EDUCATION

1986-1990	University of Wisconsin, Eau Claire		Environmental & Public Health
1991-1992	University of Wisconsin, Green Bay	B.S.	Environmental Science
1995-2002	University of Wisconsin, Oshkosh	M.S.	Microbiology & Immunology
1998-2008	University of Arizona	Ph.D.	Epidemiology

PRINCIPAL POSITIONS HELD

1992-1996	Miller Engineers & Scientists	Environmental Scientist
1996-1997	Mercy Medical Center	Microbiology Technician
1999-2004	University of Arizona	Research Specialist
2004-2004	Biomedical Research Foundation of Southern AZ	Research Manager
2005-2010	Radiant Research, Inc.	Research Coordinator
2010-now	Blood Systems Research Institute	Co-Director, Epidemiology
2010-2015	Blood Systems Research Institute	Staff Scientist I
2015-now	Blood Systems Research Institute	Staff Scientist II

OTHER POSITIONS HELD CONCURRENTLY

1995-1998	University of Wisconsin, Oshkosh	Research Assistant
1998-2008	University of Arizona	Research Assistant
2008-2010	Radiant Research, Inc., Scottsdale, AZ	Quality Assurance Manager
2016-now	University of California San Francisco	Group Instructor CP124
2017-now	University of California San Francisco	Assistant Adjunct Professor

HONORS AND AWARDS

1987	National Honor Society Nomination and Membership
2003	Association for Research in Vision and Ophthalmology (ARVO) Travel Grant
2003	Distinguished Poster, ARVO Annual Meeting
2015	Top Poster, AABB Annual Meeting

KEYWORDS/AREAS OF INTEREST

Epidemiology, infectious diseases, transfusion medicine, blood donors, blood safety, screening efficacy, HIV, HBV, HCV

PROFESSIONAL ACTIVITIES

PROFESSIONAL ORGANIZATIONS

MEMBERSHIPS

1996-1998	ASM - American Society of Microbiology
2003-2004	ARVO - Association for Research in Vision and Ophthalmology
2011-now	AABB - American Association of Blood Banks
2012-now	ISBT - International Society of Blood Transfusion
2013-now	SER - Society for Epidemiologic Research

SERVICE TO PROFESSIONAL PUBLICATIONS

2011- now Referee for American Journal of Public Health (7), BMC Infectious Diseases (12), BMC Health Services Research (1), Clinical Epidemiology (2), Environmental Science and Pollution Research (1), International Journal of Clinical Transfusion Medicine (1), ISBT Science Series (1), Journal of Blood Medicine (2), Journal of Infection and Public Health (1), Journal of Medical Virology (1), Life Sciences (1), Proceedings of the Royal Academy B (1), Transfusion (24), Vox Sanguinis (1),

INVITED PRESENTATIONS

INTERNATIONAL

International Congress of the ISBT; Cancun, Mexico, 2012 (oral abstract)
International Society for Cellular Therapy Annual Meeting, Seattle, 2012 (oral abstract)
Regional Congress of the International Society Blood Transfusion; Amsterdam, The Netherlands, 2013 (poster and two oral abstracts); London, UK (poster)
HEMO-Brazil Congress; Florianopolis, SC, Brazil, 2014 (invited presentation)
International Conference on Human Retrovirology: HTLV & Related Viruses; Trois Ilets, Martinique, FWI, 2015 (poster)

NATIONAL

American Society for Microbiology Annual Meeting, Chicago, 1999 (poster)
Society for Risk Analysis Annual Meeting, Atlanta, 1999 (poster)
The Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting, Ft. Lauderdale, 2003 (distinguished poster)
The American Society for Bone and Mineral Research Annual Meeting, Seattle, 2004 (poster)
AABB Annual Meeting & CTTXPO, Denver, 2013 (poster); Philadelphia, 2014 (poster); Anaheim, 2015 (top poster); Boston, 2016 (poster); San Diego, 2017 (poster)
AABB Annual Meeting & CTTXPO, San Diego, 2017 (Invited speaker, Educational forum: Beyond Incidence and Prevalence: The Role of Epidemiology in the Evolving Field of Blood Safety and Availability Research)

REGIONAL AND OTHER PRESENTATIONS

Epidemiology Forum, University of Arizona, Tucson, 2001 (oral abstract); Tucson, 2002 (poster)
Arizona Cancer Center Research Forum, University of Arizona, Tucson, 2002 (poster)
BSRI Scientific Retreat, San Francisco, 2014 (invited presentation)

CONTINUING EDUCATION COURSES

2013 Scientific Leadership and Management, The J. David Gladstone Institutes

GOVERNMENT and OTHER PROFESSIONAL SERVICE

2009-now	A.T. Still University IRB, Mesa, AZ - Scientific Member at Large
2014-2017	Blood Systems Research Institute - Helping Employees at the Right Time (HEART) Fund Member
2015-2017	Blood Systems Research Institute - HEART Fund Administrator
2015-now	Blood Systems Research Institute - Blood Centers of the Pacific New Employee Orientation

UNIVERSITY AND PUBLIC SERVICE

UNIVERSITY SERVICE

UCSF CAMPUS-WIDE

2013-now UCSF IRB Laurel Heights Committee - Alternate member

PUBLIC SERVICE

2014-now Golden Gate National Parks Conservancy, SF, CA (Trail steward)

2013-now Presidio Trust, San Francisco, CA (Archaeology lab and field excavation)

2001-2003 Sky Island Alliance, Tucson, AZ (Wildlife tracking and habitat restoration)

TEACHING and MENTORING

FORMAL SCHEDULED CLASSES FOR UCSF STUDENTS

2016-NOW University of California San Francisco

Group Lead CP124: Study Design

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED:

Dates	Name	Program or School	Role	Student's Current Position
2012	Benjamin Usadi	MPH program, Epidemiology & Biostatistics, UC Berkeley	Co-supervised summer internship research project	Dartmouth
2013	Mark Kane	MPH program, Epidemiology & Biostatistics, UC Berkeley	Co-supervised summer internship research project	Medical School
2014	Michelle Vo	MPH program, Epidemiology & Biostatistics, UC Berkeley	Co-supervised summer internship research project	Kaiser Permanente
2016	Adam Jauregi	MS Program, Biostatistics, California State University, East Bay	Co-supervised summer internship research project	Post-graduate education

Other Completed Teaching and Mentoring Activities

2001-2003 Mel & Enid Zuckerman School of Public Health, University of Arizona, Tucson AZ
Teaching Assistant: Basic Principles of Epidemiology & Biostatistics in Public Health

INFORMAL TEACHING AND MENTORING

In my role as co-director of BSRI Epidemiology Core, I provide instruction, guidance, trouble-shooting, mentoring, and analytical consulting for post-doctoral students, research staff, and investigators within the BSRI research cores: Epidemiology, Viral Discovery, Immunology, Molecular Transfusion, Cellular Therapeutics, and Viral Repository. Providing assistance in conducting clinical or epidemiological research in translational science, transfusion medicine and blood safety includes guidance in study protocol development, research design, power and sample size calculation, data collection, statistical analysis/interpretation, and scientific writing. Yearly instructive time is approximately four hours per week for 52 weeks or 208 hours total per year.

As part of the UC Berkeley summer internship program I co-mentored one Master's-level graduate student in epidemiology and biostatistics each summer from 2012-2014. The total direct mentoring time during each summer was approximately 5 hours per week for a 12-week period (60 hours per summer).

In 2013 I participated in the Specialist in Blood Banking (SBB) training program offered by Blood Systems, Inc. and University of Texas Medical Branch (UTMB) at Galveston SBB Program. Teaching included developing specific course content on research methods for transfusion medicine and clinical research, interpretation and critical evaluation of scientific publications, and review of corresponding online course materials developed by the primary course leaders for this project. The total preparation and mentoring time was 80 hours in 2013. The mentoring component consisted of helping guide trainees in protocol development, data collection, and analysis/interpretation of findings.

Other informal teaching 2011 – 2015: Seminars, continuing education presentations, and presentations at national and international congresses, approximately 10 hours of presentation and 40 hours of preparation each year.

TEACHING and MENTORING AWARDS and NOMINATIONS

2016	UCSF School of Pharmacy Dean's Recognition for Excellence in Teaching
2017	UCSF School of Pharmacy Dean's Recognition for Excellence in Teaching

RESEARCH AND CREATIVE ACTIVITIES

RESEARCH AWARDS AND GRANTS

CURRENT

HHSF223201510149C	Custer (PI)	09/25/15-09/24/19
US FDA		

Transfusion-Transmissible Infection Monitoring System (TTIMS), Laboratory and Risk Factor Coordinating Center (LRCC)

The TTIMS project purpose is to establish an integrated, comprehensive US Blood Donor surveillance system to monitor transfusion-transmissible infections (TTI)s such as HIV, HBV, and HCV including characterization of TTI marker risks in the US blood supply with monitoring of temporal, geographic, and demographic trends to and provide a framework for evaluating the effect of a new intervention (such as implementation of a new deferral policy) on TTI risks and blood donor risk factors. TTIMS is expected to fill a significant gap in current public health blood donor surveillance efforts and to serve as a resource for additional investigations. The program will support the collection of integrated risk factor data and disease marker surveillance information across different blood collection organizations. Furthermore, systematically collected and combined data are critical for this national surveillance effort.

The LRCC will be responsible for leading risk factor interviews of donors with specific infections focused primarily on HIV and newly acquired HBV and HCV infections to identify behavioral factors associated with donor infections. The LRCC will also genotype identified viruses to monitor the viral strains present in blood donations in the U.S.

Role: Co-Investigator

HHSF223201510165C	Stramer, Susan (PI)	09/25/15 – 09/24/19
US FDA		

Transfusion-Transmissible Infections Monitoring System (TTIMS) Donation Database Coordinating Center (DDCC)

Role: Subcontract Co-Investigator

The DDCC will be responsible for collecting data on more than 50% of the US blood supply and using that data to monitor the prevalence and incidence of all HIV, HBV and HCV cases in blood donors by demographic, geographic and temporal characteristics. The TTIMS database will contain all information from donations given to these centers during the period of study and will be used to extract the needed denominator data for incidence and prevalence calculations. The DDCC is responsible for providing to the LRCC both testing and demographic information on the consensus-positive donations of interest for LRCC activities (HIV consensus positives and HBV and HCV NAT yields) and for incorporating selected data from the LRCC back into the TTIMS donation database.

HHSN2682011000051 Murphy (PI) 03/15/11 – 03/14/18
NIH/NHLBI

Recipient Epidemiology and Donor Evaluation Study (REDS-III) Domestic Sites

The overall objective of this project is to conduct studies involving blood donors, blood banking and transfusion recipients in order to generate new knowledge which will promote the safety and adequacy of the US blood supply, including core donor and recipient database development and specific research protocols to be selected by the REDS III Domestic Steering Committee.

Role: Co-Investigator

5424 Murphy (PI) 01/01/18 – 12/31/18
Blood Systems, Inc.
Epidemiology Core

The role of the Epidemiology Core is to perform epidemiological research within Blood Systems on blood donors toward a safe and adequate blood supply and to support additional research and operational projects requiring database, epidemiologic, and analytic expertise.

Role: Staff Scientist

10810 Busch (PI) 01/01/18 – 12/31/18
Grifols Diagnostics, Inc.

Efficacy and cost-effectiveness of HBV, HCV and HIV blood screening

The goal of this study is to compare the efficacy and cost effectiveness of several blood safety screening modalities based on observed ID-NAT and serology yield in several countries, and to examine if different screening scenarios should be chosen in low and high prevalent countries for optimal cost effectiveness.

Role: Staff Scientist

COMPLETED RESEARCH SUPPORT

10810 Busch (PI) 01/01/14 – 12/31/17
Grifols Diagnostics, Inc.

Goals: Efficacy and cost-effectiveness of HBV, HCV and HIV blood screening

10810 Busch (PI) 01/01/11 – 12/31/13
Novartis Vaccines and Diagnostics, Inc.

Goals: Efficacy and cost-effectiveness of HBV, HCV and HIV blood screening

5424 Murphy (PI) 01/01/11 – 12/31/17
Blood Systems, Inc.
Epidemiology Core

PEER-REVIEWED PUBLICATIONS

1. Williams, B., Suen, H., Brown, S., **Bruhn, R.**, de Blaquiére, R., and Rzasa, S. A hierarchical linear model of factors associated with public participation among residents living near the U.S. Army's chemical weapons stockpile sites. *Environmental Planning and Management* 2001;44:41-65.

2. Chen, Z., Maricic, M., Nguyen, P., Ahmann, F.R., **Bruhn, R.**, and Dalkin, B.L. Low bone density and high percentage of body fat among men who were treated with androgen deprivation therapy for prostate carcinoma. *Cancer* 2002;95:2136-44. PubMed PMID: 12412167.
3. Conley, S., **Bruhn, R.**, Morgan, P., and Stamer, W. Selenium's effects on MMP-2 and TIMP-1 secretion by human trabecular meshwork cells. *Investigative Ophthalmology & Visual Science* 2004;45:473-9. PubMed PMID: 14744887.
4. Chen, Z., Staten, L.K., Maskarinec, G., Arendell, L., **Bruhn, R.**, Nicholas, S.J., and Marshall, J. The relationship between mammographic density and body composition ---results from a cross-sectional study among Hispanic and non-Hispanic White women. *International Journal of Body Composition Research* 2004;2:23-29.
5. Trabeau, M., **Bruhn-Keup, R.**, McDermott, C., Keomany, M., Millsaps, A., Emery, A., and De Stasio, Jr., B. Midsummer decline of a *Daphnia* population attributed in part to cyanobacterial capsule production. *Journal of Phytoplankton Research* 2004;(26)8:949-961.
6. Thomson, C.A., Arendell, L.A., **Bruhn, R.L.**, Maskarinec, G., Lopez, A.M., Wright, N.C., Moll, C.E., Aickin, M., and Chen, Z. Pilot study of dietary influences on mammographic density in pre- and postmenopausal Hispanic and non-Hispanic white women. *Menopause* 2007;14:243-50. PubMed PMID: 17091096.
7. **Bruhn, R.L.**, Stamer, W. D., Herrygers, L., Levine, J., and Noecker, R.J. Relationship between glaucoma and selenium levels in plasma and aqueous humor. *British Journal of Ophthalmology* 2009;93:1155-1158. PubMed PMID: 18556426.
8. Custer, B., Agapova, M., **Bruhn, R.**, Cusick, R., Kamel, H., Tomasulo, P., Biswas, H., Tobler, L., Lee, T.H., Caglioti, S., and Busch, M. Epidemiologic and laboratory findings from 3 years of testing United States blood donors for *Trypanosoma cruzi*. *Transfusion* 2012;52:1901-1911. PubMed PMID: 22339233.
9. van den Berg, K., Lam, J., **Bruhn, R.**, Custer, B., and Murphy, E.L. Water administration and the risk of syncope and presyncope during blood donation: a randomized clinical trial. *Transfusion* 2012;52:2577-2584. PMCID: PMC3404162.
10. Ngo, L., **Bruhn, R.**, and Custer, B. Risk perception and its role in attitudes toward blood transfusion: a qualitative systematic review. *Transfusion Medicine Reviews* 2013;27:119-128. PubMed PMID: 23499187.
11. **Bruhn, R.**, Lelie, N., Custer, B., Busch, M., Kleinman, S., and the International NAT Study Group. Prevalence of HIV RNA and antibody in first, lapsed, and repeat blood donations across five international regions and relative efficacy of alternative screening scenarios. *Transfusion* 2013;53:2399-2412. PubMed PMID: 23782054.
12. Lelie, N., **Bruhn, R.**, Custer, B., Busch, M., Kleinman, S., and the International Individual Donation NAT Study Group. Efficacy and cost effectiveness of nucleic acid amplification testing (NAT) and serologic screening in preventing HBV, HCV and HIV transmission risk. *Mexican Journal of Transfusion Medicine* 2013;6:37-39.
13. Miranda, C., Moreno, E., **Bruhn, R.**, Larsen, N.M., Wright, D.J., Oliveira, C.D.L., Carneiro-Proietti, A.B.F., Loureiro, P., de Almeida-Neto, C., Custer, B., Sabino, E.C., Goncalves, T.T., for the NHLBI Retrovirus Epidemiology Donor Study-ii (REDS-II), International Component. Knowledge of HIV testing and attitudes towards blood donation at three blood centres in Brazil. *Vox Sanguinis* 2014;106:344-353. PMCID: PMC4455888.
14. Custer, B., Bravo, M., **Bruhn, R.**, Land, K., Tomasulo, P., and Kamel, H. Predictors of hemoglobin recovery or deferral in blood donors with an initial successful donation. *Transfusion* 2014;54(9):2267-75. PubMed PMID: 24697792.
15. Bloch, E., Cohn, C., **Bruhn, R.**, Hirschler, N., and Nguyen, K. A cross-sectional pilot study of blood utilization in twenty-seven hospitals in Northern California. *Am J Clin Pathol.* 2014 Oct;142(4):498-505. PubMed PMID: 25239417.
16. Bloch, E., Busch, M., Lee, T., Montalvo, L., Matthews, Y., Bird, A., **Bruhn, R.**, and Stefan, V. Microchimerism in the transfused obstetric population. *Vox Sanguinis* 2014;107(4):428-30. PubMed

PMID: 25040346.

17. Kane, M.A., Bloch, E., **Bruhn, R.**, Kaidarova, Z., and Murphy, E.L. Demographic determinants of syphilis seroprevalence among U.S. blood donors, 2011-2012. *BMC Infect Dis.* 2015 Feb 15;15:63. PMID: PMC4369345.
18. **Bruhn R**, Custer B, Vanderpool S, Townsend M, Kamel H, and Tomasulo P. Impact of increasing sample volume from 4 ml to 8 ml on bacterial detection rates in apheresis platelets: a meta-analysis. *Vox Sang* 2015;108(3):318-20. PubMed PMID: 25556667.
19. Rahbar, E., Cardenas, J.C., Baimukanova, G., Usadi, B., **Bruhn, R.**, Pati, S., Ostrowski, S.R., Johansson, P.I., Holcomb, J.B., Wade, C.E. Endothelial glycocalyx shedding and vascular permeability in severely injured trauma patients. *J Transl Med.* 2015 Apr;13:117. PMID: PMC4397670.
20. **Bruhn R**, Lelie N, Busch M, Kleinman S and the International NAT Study Group. Relative efficacy of nucleic acid amplification testing and serologic screening in preventing hepatitis C virus transmission risk in seven international regions. *Transfusion* 2015;55(6):1195-205. PubMed PMID: 25727549.
21. Gibb SL, Zhao Y, Potter D, Hylin MJ, **Bruhn R**, Baikumanova G, Zhao J, Xue H, Abdel-Mohsen M, Pillai SK, Moore AN, Johnson EM, Cox CS, Dash PK, and Pati S. TIMP3 attenuates the loss of neural stem cells, mature neurons and neurocognitive dysfunction in Traumatic Brain Injury. *Stem Cells.* 2015;33(12):3530-44. PubMed PMID: 26299440.
22. Li L, Deng X, Da Costa AC, **Bruhn R**, Deeks SG and Delwart, E. Virome analysis of antiretroviral-treated HIV patients shows no correlation between T-cell activation and anelloviruses levels. *J Clin Virol.* 2015;72:106-13. PMID: 26479202; NIHMSID: NIHMS728851; PMID: PMC4697764.
23. Vo M, **Bruhn R**, Kaidarova Z, Custer B, Murphy EL, and Bloch E. A retrospective analysis of false positive infectious screening results in blood donors. *Transfusion.* 2016 Feb;56(2):457-65. doi: 10.1111/trf.13381. PMID: 26509432.
24. Baimukanova G, Miyazawa B, Potter D, Muench M, **Bruhn R**, Gibb SL, Spinella PC, Cap AP, Cohen M, Pati S. Platelets Regulate Vascular Endothelial Stability: Assessing the Storage Lesion and Donor Variability of Apheresis Platelets. *Transfusion* 2016 Mar;56 Suppl 1:S65-75. doi: 10.1111/trf.13532.
25. Baikumanova G, Miyazawa B, Potter, D, Gibb S, Keating S, Danesh A, Beyer A, Dayter Y, **Bruhn R**, Muench M, Cap AP, Norris PJ, Spinella P, Cohen M, and Pati S. The effects off 22 and 4C storage of platelets on vascular endothelial integrity and function. *Transfusion* 2016 Mar;56 Suppl 1:S52-64. doi: 10.1111/trf.13455.
26. Bloch EM, Levin AE, Williamson PC, Cyrus S, Shaz B, Kessler D, Gorlin J, **Bruhn R**, Lee TH, Montalvo L and Busch MP. A prospective evaluation of chronic B. microti infection in seroreactive blood donors. *Transfusion.* 2016 Jul;56(7):1875-82. doi: 10.1111/trf.13617. PMID: 27184253
27. Simmons G, Brès V, Lu K, Liss NM, Brambilla DJ, Ryff KR, **Bruhn R**, Ocampo D, Linnen JM, Latoni G, Petersen LR, Williamson PC and Busch MP. High chikungunya virus incidence and frequency of viremic blood donations in Puerto Rico during 2014 epidemic. *EID*, 2016;22(7):1221-8. doi: 10.3201/eid2207.160116. PMID: 27070192
28. Usadi B, **Bruhn R**, Lin J, Lee TH, Blackburn E, and Murphy EL. Telomere length, proviral load and neurologic impairment in HTLV-1 and HTLV-2-infected subjects. *Viruses.* 2016 Aug 11;8(8). pii: E221. doi: 10.3390/v8080221. PMID: 27529270
29. **Bruhn R**, Moreno E, Sabino E, Ferreira NAF, Carneiro-Proietti AB, Lopes ME, Sampaio D, Loureiro P, Custer B and Goncalvez TT for the NHLBI Retrovirus Epidemiology Donor Study-II (REDS-II) International Component. Self-reported Historic HIV Testing in a Brazilian Blood Donor HIV Case/Control Study. *Transfusion*, September 2016 doi: 10.1111/trf.13792. PMID: 27716930
30. Bialkowski W, **Bruhn R**, Edgren G, and Papanek P. Citrate anticoagulation: are blood donors donating bone? *J Clin Apher.* 2016 Oct;31(5):459-63. doi: 10.1002/jca.21438. PMID: 26607494
31. Lelie N, **Bruhn R**, Busch M, Vermeulen M, Tso W-C, Kleinman S and the International NAT Study Group. Detection of different categories of hepatitis B virus (HBV) infection in a multi-regional study comparing the clinical sensitivity of HBsAg and HBV DNA testing. *Transfusion*, 2017 Jan;57(1):24-35. doi: 10.1111/trf.13819. PMID: 27673757

32. Karafin MS, **Bruhn R**, Westlake M, Sullivan MT, Bialkowski W, Edgren G, Roubinian NH, Hauser RG, Kor DJ, Fleischmann D, Gottschall JL, Murphy EL, Triulzi D; National Heart, Lung, and Blood Institute Recipient Epidemiology and Donor Evaluation Study-III (REDS-III). Demographic and epidemiologic characterization of transfusion recipients from four US regions: evidence from the REDS-III recipient database. *Transfusion*. 2017 Dec;57(12):2903-2913. doi: 10.1111/trf.14370.

NON-PEER REVIEWED PUBLICATIONS AND OTHER ACTIVITIES

Books and Chapters

1. Murphy EL, **Bruhn R**. Human T cell leukemia viruses types 1 & 2. In Kaslow, R., Stanberry, L. LeDuc, J., eds. *Viral Infections in Humans: Epidemiology and Control* 5th ed. New York, NY:Springer; 2014.
2. Murphy EL, **Bruhn R**. Human T-cell lymphotropic virus. In Bennett, J., Dolin, R., Blaser, M., eds. *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases* 8th ed. Philadelphia, PA:Elsevier; 2014.
3. **Bruhn R**, Mahieux R, Murphy EL. Human Lymphotropic viruses: HTLV-1 and HTLV-2. In Richman DD, Whitley RJ, and Hayden, FG, eds. *Clinical Virology*, 4th ed. Washington, DC:ASM Press, 2017. doi:10.1128/9781555819439
4. Murphy EL, **Bruhn R**. Human T-cell lymphotropic virus. In Bennett, J., Dolin, R., Blaser, M., eds. *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases* 9th ed. Philadelphia, PA:Elsevier; in Press.

OTHER CREATIVE ACTIVITIES

- 2013 Co-authored an education unit on "Evaluation of Therapy/Intervention Articles" as part of the Specialist in Blood Banking Online Education Program, a course designed to teach basic epidemiology and statistics to medical technologists and other laboratory or blood banking employees.
- 2014 Co-organized and presented on the topic of transfusion medicine epidemiology at the annual BSRI Scientific Retreat
- 2017 Invited speaker, Educational forum: Beyond Incidence and Prevalence: The Role of Epidemiology in the Evolving Field of Blood Safety and Availability Research

RESEARCH CONTRIBUTION TO SCIENCE

The primary areas of my research contribution to science are in the epidemiology of transfusion-transmitted disease agents, including viruses (HIV, HTLV, HBV, HCV, WNV, Dengue), protozoa (Babesia, Trypanosoma) and emerging transfusion-transmissible pathogens including determination of risk factors and in health impact studies of blood donors and donations. Where my work has had the most far-reaching impact includes studies of efficacy of infectious disease donor screening and residual risk estimation of transfusion-transmitted infection both in large multicenter collaborative studies, and in studies within individual blood collection organizations.

Blood donated for transfusions is routinely screened for infections using serology and/or combinations of molecular testing. The level and quality of blood screening assays to be used is determined by governing bodies in individual countries, but the reliability of blood screening tests varies depending upon the method, equipment and assays used. In order to compare the efficacy and cost effectiveness of different testing scenarios without regard to predicate technologies, a large, international multi-center (15 countries/21 organizations) study was convened. Data on nearly 12 million blood donations was collected and interdicted positive donations (HIV, HBV, HCV) were standardized according to stage of infection. Utilizing the observed yield of parallel individual donation nucleic acid testing (ID-NAT) and serologic assay screening, we imputed detection rates, residual risk, and efficacy of alternative screening scenarios in first-time, repeat, and lapsed donors/donations based on a mathematical infectivity-based risk model. These analyses were used to determine country- and region-specific efficacy and risk estimations.

The second major area of my research focuses on the epidemiology of blood donors and donations. Primarily, the intent is to measure and estimate the impact of the blood donation process on donor health, both immediate and distant. Blood donors are a dedicated and valued resource and the act of donating should not be a detriment to them. With continued monitoring and evaluation of donors and donation procedures and assessment of adverse reactions through observational and intervention studies, the goal is to preserve both donor health and a safe blood supply.

A third area of my research endeavors to understand factors that motivate or inhibit both donor and recipient behavior and to utilize the surveillance of knowledge and attitudes to inform and develop approaches to blood safety via policy creation or change.

Complete List of Published Work in My Bibliography:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1LaLcs2n5poAo/bibliography/48613082/public/?sort=date&direction=ascending>