

CURRICULUM VITAE

Blake W. Buchan PhD

**Assistant Professor
Department of Pathology
Division of Administration
Associate Director, Clinical Microbiology**

HOME ADDRESS:

2520 Lamplighter Ln.
Brookfield, WI 53045
Phone: 414-524-9017

OFFICE ADDRESS:

Froedtert/MCW Laboratory Building
9200 W Wisconsin Ave
Milwaukee, WI 53226
Phone: 414-805-6988
Fax: 414-805-6980
Email: bbuchan@mcw.edu

PLACE OF BIRTH: Waukesha

CITIZENSHIP: USA

EDUCATION:

08/01/1996 - 12/29/2001 B.S., Microbiology, The University of Wisconsin - Oshkosh, Oshkosh, WI
08/01/2004 - 11/13/2009 Ph.D., Microbiology, The University of Iowa, Iowa City, IA

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

11/30/2009 - 08/01/2011 Postdoctoral Fellow, Pathology, Microbiology, The Medical College of Wisconsin, Milwaukee, WI 53226

FACULTY APPOINTMENTS:

08/01/2011 - 07/31/2013 Instructor, Department of Pathology, The Medical College of Wisconsin, Milwaukee, WI 53226
08/01/2013 - Present Associate Professor, Department of Pathology, The Medical College of Wisconsin, Milwaukee, WI 53226

ADMINISTRATIVE APPOINTMENTS:

08/01/2011 - Present Associate Director, Clinical Microbiology, Wisconsin Diagnostic Laboratories, Milwaukee, WI
09/01/2012 - Present Director of Safety, Wisconsin Diagnostic Laboratories, Milwaukee, WI
09/01/2015 - Present Staff Clinical Microbiologist, Pathology, The Children's Hospital of Wisconsin, Milwaukee, WI

EDUCATIONAL ADMINISTRATIVE APPOINTMENTS:

07/01/2017 - Present Associate Director, Clinical Pathology Residency Program, The Medical College of Wisconsin, Milwaukee, WI

HOSPITAL STAFF PRIVILEGES:

08/01/2011 - Present Froedtert Hospital, 9200 W. Wisconsin Ave, Milwaukee, WI 53226

09/01/2015 - Present The Children's Hospital of Wisconsin, 9200 W. Wisconsin Ave, Milwaukee, WI 53226

SPECIALTY BOARDS AND CERTIFICATION:

<u>Board Certified</u>	<u>Issue Date</u>	<u>Expiration</u>
American Board of Medical Microbiology	01/01/2014	12/31/2020

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorial Board

Ad-Hoc Reviewer

06/01/2001 - Present Journal of Clinical Microbiology

04/01/2013 - Present Diagnostic Microbiology and Infectious Disease

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

01/01/2013 - Present Board Member, Special Interest Group Director, Bacteriology Special Interest Group, South Central Association for Clinical Microbiology

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

Local

Buchan, BW, Gram-Negative Mechanisms of Antimicrobial Resistance, Infectious Disease Microbiology Conference, Froedtert Hospital, Milwaukee, WI, 02/18/2013 - Present

Buchan, BW, 12. Clash of the Titans: MALDI-ToF MS Versus Nucleic Acid-based Methods for the Identification of Microorganisms Directly from Positive Blood Culture Broths, Lunch and Learn Conference, Columbia St. Marys Hospital. Milwaukee, WI, 04/16/2013 - Present

Regional

Buchan, BW, New Technologies in Bacterial ID (MALDI-TOF), BD Inform Educational Series Workshop, Hilton Seattle Airport & Conference Center, Seattle, WA, 04/05/2011 - Present

Buchan, BW, New Technologies in Bacterial ID (MALDI-TOF), BD Inform Educational Series Workshop, Omni Severin Hotel, Indianapolis, IN, 04/28/2011 - Present

Buchan, BW, Inducible Macrolide-Lincosamide-Streptogramin B (iMLSb) Resistance in Staphylococcus Species, Illinois Fall SCACM Meeting, Loyola University Medical Center, Maywood, IL, 10/04/2011 - Present

Buchan, BW, Ledebauer, NA, Microbial Specimen Processing – Yesterday, Today and Tomorrow: Point / Counterpoint, Illinois Fall SCACM Meeting, Loyola University Medical Center, Maywood, IL, 10/05/2012 - Present

National

Buchan, BW, Characterization of Bacteria from Positive Blood Cultures- Results and Impact, Bruker Symposium, Muriel's on Jackson Square, New Orleans, LA, 05/22/2011 - Present

Buchan, BW, Infectious Disease Testing with the Verigene System: Sample-to-Result Multiplex Assays for Blood Cultures and Enteric Pathogens, Nanosphere AMP Corporate Workshop. Association for Molecular Pathology (AMP) Annual Meeting, Long Beach, CA, 10/24/2012 - Present

International

Buchan, BW, Evaluation of Matrix-Assisted Laser Desorption/Ionization Time of Flight (MALDI-TOF) for the Identification of Microorganisms Directly from Positive Blood Culture Bottles, 49th Annual Meeting of the Infectious Diseases Society of America, Boston Convention and Exhibition Center. Boston, MA, 10/22/2011 - Present

Buchan, BW, Recent Advances in Mycobacterial Culture, Identification and Susceptibility Testing Including MALDI-TOF, Thermo Scientific Expert Opinion Session. 22nd European Congress of Clinical Microbiology and Infectious Disease, London, GB., 03/02/2012 - Present

Buchan, BW, Comparison of MALDI-TOF MS to nucleic acid sequencing for the identification of clinical isolates of Mycobacterium spp., 52nd ICAAC Meeting, Moscone Convention Center, San Francisco,

COMMITTEE SERVICE:

Hospital

08/01/2012 - Present Committee Member, Infection Control Committee, Froedtert Hospital

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

1. Sreenath HK, Bingman CA, Buchan BW, Seder KD, Burns BT, Geetha HV, Jeon WB, Vojtik FC, Aceti DJ, Frederick RO, Phillips GN Jr, Fox BG. Protocols for production of selenomethionine-labeled proteins in 2-L polyethylene terephthalate bottles using auto-induction medium. *Protein Expr Purif.* 2005 Apr;40(2):256-67.
2. Schuler G, McCaffrey RL, Buchan BW, Lindemann SR, Hollenback C, Jones BD, Allen LA. Francisella tularensis genes required for inhibition of the neutrophil respiratory burst and intramacrophage growth identified by random transposon mutagenesis of strain LVS. *Infect Immun.* 2009 Apr;77(4):1324-36. PMID: PMC2663180
3. Buchan BW, McLendon MK, Jones BD. Identification of differentially regulated Francisella tularensis genes by use of a newly developed Tn5-based transposon delivery system. *Appl Environ Microbiol.* 2008 May;74(9):2637-45. PMID: PMC2394869
4. Buchan BW, McCaffrey RL, Lindemann SR, Allen LA, Jones BD. Identification of migR, a regulatory element of the Francisella tularensis live vaccine strain iglABCD virulence operon required for normal replication and trafficking in macrophages. *Infect Immun.* 2009 Jun;77(6):2517-29. PMID: PMC2687360
5. McCaffrey RL, Schwartz JT, Lindemann SR, Moreland JG, Buchan BW, Jones BD, Allen LA. Multiple mechanisms of NADPH oxidase inhibition by type A and type B Francisella tularensis. *J Leukoc Biol.* 2010 Oct;88(4):791-805. PMID: PMC2974429
6. Ulland TK, Buchan BW, Ketterer MR, Fernandes-Alnemri T, Meyerholz DK, Apicella MA, Alnemri ES, Jones BD, Nauseef WM, Sutterwala FS. Cutting edge: mutation of Francisella tularensis mviN leads to increased macrophage apoptosis, impaired inflammasome activation and a loss of virulence. *J Immunol.* 2010 Sep 01;185(5):2670-4. PMID: PMC2953561
7. Jannetto PJ, Buchan BW, Vaughan KA, Ledford JS, Anderson DK, Henley DC, Quigley NB, Ledebor NA. Real-time detection of influenza A, influenza B, and respiratory syncytial virus A and B in respiratory specimens by use of nanoparticle probes. *J Clin Microbiol.* 2010 Nov;48(11):3997-4002. PMID: PMC3020893
8. Buchan BW, Ledebor NA. Identification of two borderline oxacillin-resistant strains of Staphylococcus aureus from routine nares swab specimens by one of three chromogenic agars evaluated for the detection of MRSA. *Am J Clin Pathol.* 2010 Dec;134(6):921-7.
9. Buchan BW, Peterson JF, Cogbill CH, Anderson DK, Ledford JS, White MN, Quigley NB, Jannetto PJ, Ledebor NA. Evaluation of a microarray-based genotyping assay for the rapid detection of cytochrome P450 2C19 *2 and *3 polymorphisms from whole blood using nanoparticle probes. *Am J Clin Pathol.* 2011 Oct;136(4):604-8.
10. Anderson NW, Buchan BW, Riebe KM, Parsons LN, Gnacinski S, Ledebor NA. Effects of solid-medium type on routine identification of bacterial isolates by use of matrix-assisted laser desorption ionization-time of flight mass spectrometry. *J Clin Microbiol.* 2012 Mar;50(3):1008-13. PMID: PMC3295166
11. Buchan BW, Riebe KM, Ledebor NA. Comparison of the MALDI Biotyper system using SepsiType specimen processing to routine microbiological methods for identification of bacteria from positive blood culture bottles. *J Clin Microbiol.* 2012 Feb;50(2):346-52. PMID: PMC3264150
12. Buchan BW, Anderson NW, Ledebor NA. Comparison of BD Phoenix and bioMérieux Vitek 2 automated systems for the detection of macrolide-lincosamide-streptogramin B resistance among clinical isolates of Staphylococcus. *Diagn Microbiol Infect Dis.* 2012 Mar;72(3):291-4.
13. Buchan BW, Mackey TL, Daly JA, Alger G, Denys GA, Peterson LR, Kehl SC, Ledebor NA. Multicenter clinical evaluation of the portrait toxigenic C. difficile assay for detection of toxigenic Clostridium difficile strains in clinical stool specimens. *J Clin Microbiol.* 2012 Dec;50(12):3932-6. PMID: PMC3502949

14. Ulland TK, Janowski AM, Buchan BW, Faron M, Cassel SL, Jones BD, Sutterwala FS. Francisella tularensis live vaccine strain folate metabolism and pseudouridine synthase gene mutants modulate macrophage caspase-1 activation. *Infect Immun*. 2013 Jan;81(1):201-8. PMID: PMC3536133
15. Buchan BW, Ledebner NA. Advances in identification of clinical yeast isolates by use of matrix-assisted laser desorption ionization-time of flight mass spectrometry. *J Clin Microbiol*. 2013 May;51(5):1359-66. PMID: PMC3647935
16. Anderson NW, Buchan BW, Mayne D, Mortensen JE, Mackey TL, Ledebner NA. Multicenter clinical evaluation of the illumigene group A Streptococcus DNA amplification assay for detection of group A Streptococcus from pharyngeal swabs. *J Clin Microbiol*. 2013 May;51(5):1474-7. PMID: PMC3647941
17. Anderson NW, Buchan BW, Young CL, Newton DW, Brenke C, Lapsley L, Granato PA, Ledebner NA. Multicenter clinical evaluation of VRESelect agar for identification of vancomycin-resistant Enterococcus faecalis and Enterococcus faecium. *J Clin Microbiol*. 2013 Aug;51(8):2758-60. PMID: PMC3719601
18. Buchan BW, Ginocchio CC, Manii R, Cavagnolo R, Pancholi P, Swyers L, Thomson RB Jr, Anderson C, Kaul K, Ledebner NA. Multiplex identification of gram-positive bacteria and resistance determinants directly from positive blood culture broths: evaluation of an automated microarray-based nucleic acid test. *PLoS Med*. 2013;10(7):e1001478. PMID: PMC3699453
19. Anderson NW, Buchan BW, Ledebner NA. Light microscopy, culture, molecular, and serologic methods for detection of herpes simplex virus. *J Clin Microbiol*. 2014 Jan;52(1):2-8. PMID: PMC3911428
20. Buchan BW, Olson WJ, Pezewski M, Marcon MJ, Novicki T, Uphoff TS, Chandramohan L, Revell P, Ledebner NA. Clinical evaluation of a real-time PCR assay for identification of Salmonella, Shigella, Campylobacter (Campylobacter jejuni and C. coli), and shiga toxin-producing Escherichia coli isolates in stool specimens. *J Clin Microbiol*. 2013 Dec;51(12):4001-7. PMID: PMC3838069
21. Carroll KC, Buchan BW, Tan S, Stamper PD, Riebe KM, Pancholi P, Kelly C, Rao A, Fader R, Cavagnolo R, Watson W, Goering RV, Trevino EA, Weissfeld AS, Ledebner NA. Multicenter evaluation of the Verigene Clostridium difficile nucleic acid assay. *J Clin Microbiol*. 2013 Dec;51(12):4120-5. PMID: PMC3838056
22. Ledebner NA, Lopansri BK, Dhiman N, Cavagnolo R, Carroll KC, Granato P, Thomson R Jr, Butler-Wu SM, Berger H, Samuel L, Pancholi P, Swyers L, Hansen GT, Tran NK, Polage CR, Thomson KS, Hanson ND, Winegar R, Buchan BW. Identification of Gram-Negative Bacteria and Genetic Resistance Determinants from Positive Blood Culture Broths by Use of the Verigene Gram-Negative Blood Culture Multiplex Microarray-Based Molecular Assay. *J Clin Microbiol*. 2015 Aug;53(8):2460-72. PMID: PMC4508435
23. Faron ML, Ledebner NA, Granato P, Daly JA, Pierce K, Pancholi P, Uphoff TS, Buchan BW. Detection of Group A Streptococcus in Pharyngeal Swab Specimens by Use of the AmpliVue GAS Isothermal Helicase-Dependent Amplification Assay. *J Clin Microbiol*. 2015 Jul;53(7):2365-7. PMID: PMC4473221
24. Harrington SM, Buchan BW, Doern C, Fader R, Ferraro MJ, Pillai DR, Rychert J, Doyle L, Laines A, Karchmer T, Mortensen JE. Multicenter evaluation of the BD max enteric bacterial panel PCR assay for rapid detection of Salmonella spp., Shigella spp., Campylobacter spp. (C. jejuni and C. coli), and Shiga toxin 1 and 2 genes. *J Clin Microbiol*. 2015 May;53(5):1639-47. PMID: PMC4400754
25. Buchan BW, Allen S, Burnham CA, McElvania TeKippe E, Davis T, Levi M, Mayne D, Pancholi P, Relich RF, Thomson R, Ledebner NA. Comparison of the next-generation Xpert MRSA/SA BC assay and the GeneOhm StaphSR assay to routine culture for identification of Staphylococcus aureus and methicillin-resistant S. aureus in positive-blood-culture broths. *J Clin Microbiol*. 2015 Mar;53(3):804-9. PMID: PMC4390651
26. Buchan BW, Faron ML, Fuller D, Davis TE, Mayne D, Ledebner NA. Multicenter clinical evaluation of the Xpert GBS LB assay for detection of group B Streptococcus in prenatal screening specimens. *J Clin Microbiol*. 2015 Feb;53(2):443-8. PMID: PMC4298547
27. Buchan BW, Ledebner NA. Emerging technologies for the clinical microbiology laboratory. *Clin Microbiol Rev*. 2014 Oct;27(4):783-822. PMID: PMC4187641
28. Beck ET, Buchan BW, Riebe KM, Alkins BR, Pancholi P, Granato PA, Ledebner NA. Multicenter evaluation of the Quidel Lyra Direct C. difficile nucleic acid amplification assay. *J Clin Microbiol*. 2014 Jun;52(6):1998-2002. PMID: PMC4042815
29. Buchan BW, Olson WJ, Mackey TL, Ledebner NA. Clinical evaluation of the walk-away specimen processor and ESwab for recovery of Streptococcus agalactiae isolates in prenatal screening

- specimens. *J Clin Microbiol.* 2014 Jun;52(6):2166-8. PMID: PMC4042734
30. Anderson NW, Buchan BW, Ledebor NA. Comparison of the BD MAX enteric bacterial panel to routine culture methods for detection of *Campylobacter*, enterohemorrhagic *Escherichia coli* (O157), *Salmonella*, and *Shigella* isolates in preserved stool specimens. *J Clin Microbiol.* 2014 Apr;52(4):1222-4. PMID: PMC3993502
 31. Buchan BW, Riebe KM, Timke M, Kostrzewa M, Ledebor NA. Comparison of MALDI-TOF MS with HPLC and nucleic acid sequencing for the identification of *Mycobacterium* species in cultures using solid medium and broth. *Am J Clin Pathol.* 2014 Jan;141(1):25-34.
 32. Faron ML, Buchan BW, Coon C, Liebrechts T, van Bree A, Jansz AR, Soucy G, Korver J, Ledebor NA. Automatic Digital Analysis of Chromogenic Media for Vancomycin-Resistant-Enterococcus Screens Using Copan WASPLab. *J Clin Microbiol.* 2016 Oct;54(10):2464-9. PMID: PMC5035414
 33. Feldman R, Cockerham L, Buchan BW, Lu Z, Huang AM. Treatment of *Paecilomyces variotii* pneumonia with posaconazole: case report and literature review. *Mycoses.* 2016 Jul 12.
 34. Uphoff TS, Buchan BW, Ledebor NA, Granato PA, Daly JA, Marti TN. Multicenter Evaluation of the Solana Group A Streptococcus Assay: Comparison with Culture. *J Clin Microbiol.* 2016 Sep;54(9):2388-90. PMID: PMC5005512
 35. Faron ML, Ledebor NA, Patel A, Beqa SH, Yen-Lieberman B, Kohn D, Leber AL, Mayne D, Northern WI, Buchan BW. Multicenter Evaluation of Meridian Bioscience HSV 1&2 Molecular Assay for Detection of Herpes Simplex Virus 1 and 2 from Clinical Cutaneous and Mucocutaneous Specimens. *J Clin Microbiol.* 2016 Aug;54(8):2008-13. PMID: PMC4963491
 36. Faron ML, Ledebor NA, Buchan BW. Resistance Mechanisms, Epidemiology, and Approaches to Screening for Vancomycin-Resistant Enterococcus in the Health Care Setting. *J Clin Microbiol.* 2016 Oct;54(10):2436-47. PMID: PMC5035425
 37. Beck ET, Buchan BW, Reymann GC, Ledebor NA. Comparison of ESwab and Wound Fiber Swab Specimen Collection Devices for Use with Xpert SA Nasal Complete Assay. *J Clin Microbiol.* 2016 Jul;54(7):1904-6. PMID: PMC4922099
 38. Edmiston CE Jr, Ledebor NA, Buchan BW, Spencer M, Seabrook GR, Leaper D. Is Staphylococcal Screening and Suppression an Effective Interventional Strategy for Reduction of Surgical Site Infection? *Surg Infect (Larchmt).* 2016 Apr;17(2):158-66.
 39. Faron ML, Buchan BW, Vismara C, Lacchini C, Bielli A, Gesu G, Liebrechts T, van Bree A, Jansz A, Soucy G, Korver J, Ledebor NA. Automated Scoring of Chromogenic Media for Detection of Methicillin-Resistant *Staphylococcus aureus* by Use of WASPLab Image Analysis Software. *J Clin Microbiol.* 2016 Mar;54(3):620-4. PMID: PMC4767952
 40. Gonzalez MD, Langley LC, Buchan BW, Faron ML, Maier M, Templeton K, Walker K, Popowitch EB, Miller MB, Rao A, Liebert UG, Ledebor NA, Vinjé J, Burnham CA. Multicenter Evaluation of the Xpert Norovirus Assay for Detection of Norovirus Genogroups I and II in Fecal Specimens. *J Clin Microbiol.* 2016 Jan;54(1):142-7. PMID: PMC4702714
 41. Faron ML, Buchan BW, Hyke J, Madisen N, Lillie JL, Granato PA, Wilson DA, Procop GW, Novak-Weekley S, Marlowe E, Cumpio J, Griego-Fullbright C, Kindig S, Timm K, Young S, Ledebor NA. Multicenter Evaluation of the Bruker MALDI Biotyper CA System for the Identification of Clinical Aerobic Gram-Negative Bacterial Isolates. *PLoS One.* 2015;10(11):e0141350. PMID: PMC4631355
 42. Granato PA, Alkins BR, Yen-Lieberman B, Greene WH, Connolly J, Buchan BW, Ledebor NA. Comparative Evaluation of AmpliVue HSV 1+2 Assay with ELVIS Culture for Detecting Herpes Simplex Virus 1 (HSV-1) and HSV-2 in Clinical Specimens. *J Clin Microbiol.* 2015 Dec;53(12):3922-5. PMID: PMC4652092
 43. Buchan BW, Reymann GC, Granato PA, Alkins BR, Jim P, Young S. Preliminary Evaluation of the Research-Use-Only (RUO) iCubate iC-GPC Assay for Identification of Select Gram-Positive Bacteria and Their Resistance Determinants in Blood Culture Broths. *J Clin Microbiol.* 2015 Dec;53(12):3931-4. PMID: PMC4652113