

Curriculum Vitae – Douglas R. Call

Regents' Professor
Professor of Molecular Epidemiology
Associate Director for Research and Graduate Education
Fellow, American Association for the Advancement of Science
Member, Washington State Academy of Sciences

Address:

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Current positions:

- July 2019 to pres., Regents' Professor
- July 2013 to pres., Associate Director for Research and Graduate Education, Paul G. Allen School for Global Animal Health (Allen School), WSU
- July 2012 to pres., Professor of Molecular Epidemiology, Allen School, WSU
- Affiliate Faculty, Dept. Veterinary Microbiology & Pathology, WSU
- Adjunct Professor, The Nelson Mandela African Institution of Science and Technology, Arusha, TZ

Education:

- Postdoctoral Fellow, March 1999 to December 1999, Environmental Microbiology, Pacific Northwest National Laboratory, Richland, WA, Dr. Fred Brockman, advisor.
- Postdoctoral Fellow, April 1997 to March 1999, Immunopathology, University of Michigan, Department of Pathology, Ann Arbor, MI, Dr. Daniel Remick, advisor.
- PhD, 1997, Zoology, Washington State University, Pullman, WA, Dr. James Hallett, advisor.
- MS, 1990, Wildlife Mgt., Humboldt State Univ., Arcata, CA, Dr. R. J. Gutiérrez, advisor.
- BS, 1987, Wildlife Mgt., Washington State University, Pullman, WA.

Other Professional Experience:

- June 2017 to May 2019, Director, Immunology and Infectious Disease Graduate Program, Washington State University (WSU)
- July 2015 to July 2016, Interim Director, Allen School, WSU
- July 2012 to June 2013, sabbatical leave, Alternate Sponsored Fellow, Pacific Northwest National Laboratory, Pacific Northwest National Laboratory (Richland, WA, 9/12-12/12), and University of Glasgow (Scotland, 1/13-2/13)
- July 2010 to June 2012, Professor of Molecular Epidemiology, Department of Veterinary Microbiology and Pathology (VMP), WSU; Appointment: 90% Research, 10% Teaching
- July 2009 to June 2012. Caroline Engle Distinguished Professor in Research on Infectious Diseases, VMP
- July 2009 to 2019, Graduate Faculty, School of Molecular Biosciences, WSU
- July 2006 to June 2010, Associate Professor of Molecular Epidemiology, VMP
- July 2008 to 2011, Affiliate Faculty, Schl. Electrical Engineering & Computer Science, WSU

- July 2008 to June 2009, Acting Local Director, WSU Zoonosis Research Unit
- July 2000 to June 2006, Assistant Professor of Molecular Epidemiology, VMP
- December 1999 to June 2000, Research Scientist II, Pacific Northwest National Laboratory, Richland, WA
- June 1998, Instructor for BioSci 420/524, General Ecology, 4 semester credits, Eastern Michigan University, Ypsilanti, MI
- September 1994 to May 1995, Teaching Assistant for Introductory Biology and Honors Biology at Washington State University
- August 1991 to December 1991, Research Assistant for Dr. L. Maguire, School of the Environment, Duke Univ., Durham, NC

Honors:

- 2019, Promoted to Regents' Professor at Washington State University.
- 2017, Elected to membership in the Washington State Academy of Sciences, July.
- 2017, Washington State University Sahlin Faculty Excellence Award for Research, Scholarship and Arts, March 30th.
- 2017, Washington State University Distinguished Faculty Address, March 30th.
- 2015, Washington State University Honors Faculty Award for Excellence in Scholarship, Dec
- 2014, Fellow, American Association for Advancement of Science. Awarded for contributions to food and water safety, particularly through molecular epidemiology of antibiotic resistant bacteria in agricultural systems.
- 2013, Zoetis Animal Health Award for Research Excellence.
- 2011, Honors College Faculty Thesis Advisor of the Year award.
- 2010, Awarded Honorary Life Membership to the Northwest Scientific Society in recognition of service to the organization.
- 2009-2013, Inaugural Caroline Engle Distinguished Professor in Research on Infectious Diseases.
- 2006-2009, Inaugural Caroline Engle Faculty Fellow for the Washington State University Department of Veterinary Microbiology and Pathology.
- 1999, American Society for Investigative Pathology Merit Award.
- 1996, Brislawn Memorial Scholarship, Washington State University.
- 1995-96, EPA STAR Fellowship.
- 1994, James R. King Memorial Fellowship, Washington State University.

Significant institutional leadership activities:

- 05/17 to 05/19, Director, Immunology and Infectious Disease Graduate Program. Responsible for updating and reorganizing governance for the graduate program.
- 08/18 to 8/19, Co-chair, Faculty Senate Graduate Studies Committee. Responsible for running meetings, fulfilling committee duties, representing the committee on the Faculty Senate Steering Committee and in the Faculty Senate.
- 07/15-07/16, Interim Director, School for Global Animal Health. Responsible for administrating the school until a new director could be recruited.
- 2014-15, Provost Tenure & Review Committee, Subcommittee Chair, fall 2015. Responsible for evaluating and presenting subcommittee recommendations for T&P.
- 08/09-05/12, WSU College of Veterinary Medicine Research Committee, chair 05/11 to 05/12. *ad hoc* contributions 1/2013-5/2016. Responsible for organizing the annual student research symposium, reviewing DVM student summer research fellowship applications, Poncin Fellowship applications, and CVM intramural research applications.

- 05/09-05/12, WSU Faculty Status Committee, co-chair 5/10 to 5/12. Responsible for directing investigations for faculty appellants and making recommendations for decisions by the WSU President.
- 05/03-05/07, WSU University Research and Arts Committee, vice-chair 10/05-08/06; chair 8/06 to 5/07. This committee reviews center, institute and laboratory programs, and administers the New Faculty Seed Grant program at WSU.
- 2008-09, Local acting director, WSU-NIH Zoonosis Research Unit.

Editorships:

- Editorial Board for *Applied and Environmental Microbiology*, January 2008 to December 2022 (five consecutive terms).
- Editorial Board of Infectious Diseases, *Frontiers in Cellular and Infection Microbiology*, February 2011 to pres.
- Section Editor, General Methodology, Manual of Applied Microbiology, Fourth Edition, ASM Press, Washington, DC. 10.1128/9781555818821, (2015).

Mentoring (January 2018):

Since July 2000 I have had the pleasure and honor of serving as the mentor for a wide diversity of students and scientists ranging from the high school to postdoctoral level and representing over twenty different countries. At the visiting-scholar level this has included 15 students and faculty short-term training engagements (two in 2018). At the doctoral and postdoctoral level this has included three MS students, 16 (2 current) PhD students, and 16 (2 current) postdoctoral fellows. I have been a member of 69 graduate student committees (nine current) and I am currently serving on the executive committee for two NIH T32 training grants (GM08336 and AI07025) and for the Immunology and Infectious Disease Program at WSU. At the professional level, I have worked with nine summer DVM students as part of an NIH NCRR T35 training grant (T35 RR007049) and seven College of Veterinary Medicine Summer Research Fellows. I have served over six years on the WSU Honors Council and I guided five successful Honors thesis projects. I have also mentored another 23 undergraduates (one McNair Scholar) in the lab, most of whom completed the equivalent of an independent summer research project. Students in my lab are exposed to a full spectrum of activities including involvement in project conception, design, execution, presentation and writing. The latter includes lab meeting presentations and local or regional meeting presentations whenever possible. I stress (require when possible) that research projects be summarized as poster presentations and, if feasible, full or partial manuscripts. Over the past 18 years this approach has resulted in >375 presentations of which >95% included trainees as first or co-authors, and the majority of my publications include pre-doctoral first and co-authors. As a faculty mentor, I am committed to a positive engagement and learning environment for all trainees.

Research summary (January 2020):

Over the past 20 years I have published 212 papers on topics ranging from molecular pathogenesis to immunology, zoonotic disease, production animal diseases and antibiotic resistance. As of 30 December 2019 my h-index was 52, my i10 was 144, and my work had been cited 10,024 times (Google Scholar database). I have served as a project director or co-investigator for a research portfolio at WSU in excess of \$24 MD including funding from CDC, NIH, NSF, USDA, foundations and trade organizations. Recent funded projects have included work on the epidemiology of antibiotic resistance in Tanzania (NSF), on-farm antimicrobial resistance (USDA), and development of novel strategies to actively select against antibiotic-resistance bacteria (NIH). I have two new projects concerning the risk factors for carriage of

antibiotic-resistant bacteria, one in Nairobi (CDC) and one in Guatemala (CDC; awarded September 2018). I have a small collaborative project in Brazil. From a philosophical perspective, I believe that it is possible to address challenges from antibiotic resistance in ways that maximize the long-term utility of antibiotics while simultaneously benefiting public health, consumers, producers, and animal welfare. This requires a global perspective that is hypothesis-driven and that considers evolutionary, ecological, epidemiological and socio-economic factors that contribute to this problem. This also requires significant effort towards limiting the demand for antibiotics by both people and the agricultural sector.

Recent contributions to research and policy discussions regarding antimicrobial resistance.

- December 2019, I was invited to speak at the SNAP Antimicrobial Resistance meeting in Tanzania entitled, “Shared risk factors for antimicrobial resistance in Tanzania and Guatemala.”
- October 2019, I was invited to present a seminar to a national epidemiology congress in Guatemala entitled, “Evaluación comunitaria de *Escherichia coli* resistente a los antibióticos en Quetzaltenango, Guatemala 2017-2019”
- June 2019, I was invited to present a seminar to USDA-ARS, Ames, Iowa, entitled “Antibiotics and food animals: Challenges and Opportunities.”
- February 2019, I presented the Inaugural Research Grand Rounds, Elson S. Floyd College of Medicine, Spokane, WA, “How Culture and Context Complicate the Fight Against Antimicrobial Resistance: Lessons from Abroad.”
- July 2018: I was invited by Dr. John Lynch (Infectious Disease doctor from Harbor View Hospital, Seattle) to present a seminar to the University of Washington, Tele-Antimicrobial Stewardship Program (title: Antibiotics and food-animals: Challenges and opportunities). I was invited to become a continuing participant on these conference calls and I am presenting a keynote talk to this group in April 2020.
- June 2018: I was invited to meet with Pork Board representatives and pork producers and veterinarians to discuss how antibiotics are used in pork production. I also toured facilities and presented a seminar entitled, “Antimicrobial resistance is a wicked problem,” at the University of Iowa (10 June 2018).
- June 2018: Invited speaker at the 2018 APHL annual meeting. “How culture and circumstances complicate the fight against antimicrobial resistance: Lessons from Tanzania.” (other speakers in my section included a pediatrician from University of Washington), Pasadena, CA.
- March and July 2018: served as a subject matter expert for Global Good (Bill and Melinda Gates Foundation).
- 25 January 2018, invited panelist, Farm to bedside – antimicrobial resistance: challenges in agriculture and human health, Fred Hutchinson Cancer Center, Seattle, WA.
- Antimicrobial-resistance-related research in 2017 included travel to Brazil, Guatemala, Kenya and Tanzania. In January, 2018, I traveled to China and delivered two related seminars.
- 24 May 2017, invited panelist, “Antimicrobial Resistance – On the Precipice,” Life Science Innovation Northwest, Seattle, WA.
- 20-22 March 2017, participating member of the Northwest Antimicrobial Resistance Coalition during discussions about actionable surveillance strategies with the Centers for Disease Control and Prevention (Atlanta) and with multiple congressional members and staff including the House Labor, Health and Human Services, Education, and Related Agencies Appropriations Subcommittee (Washington, D.C.).

- Working with the Washington Global Health Alliance to expand the Northwest Antimicrobial Resistance Coalition. This includes repeated trips to Seattle and Washington, D.C., to organize and participate in educational efforts with the Washington State congressional delegation and to work with our coalition partners (since February 2016).
- Member of the Washington State Antimicrobial Resistance Working group, which is composed of state, private and university members who are working to foster cross-disciplinary understanding of the impacts of different antibiotic use practices on antibiotic resistance (since 2015). Presented a webinar for the group, 8 April 2016. Helping prepare for an antimicrobial resistance “summit” in 2018.
- Member of the American Society for Microbiology/American Academy of Microbiologists’ Steering Committee on Antimicrobial Resistance (since July 2016).
- Served on a Royal Veterinary College (London) advisory committee for the U.K. Fleming Fund investment in activities to counter antimicrobial resistance in low- and middle-income countries (April-October 2016).
- Member of the executive committee for the new WSU Community Health Analytics Initiative. I am leading efforts to develop a focal program on antimicrobial resistance.
- Invited panel member for a Longitude Prize on antimicrobial resistance (31 March 2016, Seattle Children’s Research Institute, Seattle, WA)
- Invited presentation for the National Institute of Food and Agriculture and the USDA’s AMR Interagency Working Group, 13 April 2016, Washington DC.
<https://nifa.usda.gov/event/april-13-2016-%E2%80%93-ifsn-seminar>.
- Invited speaker for public meeting #3, Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria, Washington, D.C., 22 June 2016, conference call presentation.
- Invited speaker for a Gates Foundation/Global Good Quarterly meeting on antimicrobial resistance, 6 September 2016, Bellevue, WA.
- Invited speaker, Washington State Department of Health, Zoonotic and Vector-borne Disease Workshop, 22 September, 2016, Ellensburg, WA. “A one-health perspective on antibiotic resistance in Tanzania.”
- Invited speaker, special session on antimicrobial resistance, Washington State Veterinary Medical Association, Pacific Northwest Veterinary Conference, Oct 9, 2016, Spokane, WA. “Identifying the most important drivers of antibiotic resistance.”
- Invited speaker, CRWAD. Reservoirs of antibiotic-resistant *Escherichia coli* in production environments: an opportunity for intervention? 4-6 December 2016, Chicago, IL.

Teaching:

- 2014 (fall), 2015 (fall), 2017 (spring and fall), 2018 (fall), 2019 (spring) co-instructor for “Deconstruction of Research” (GLANHLTH 563 with cross-listings) that is part of an integrated graduate training program in the College of Veterinary Medicine.
- 2007-2012, I was responsible for leading 3-4 weeks of VPa 545, Mechanisms of Disease. This is a graduate level course focused on formulation of hypothesis based research, evaluation of literature, and some coverage of methods employed in modern molecular biology laboratories.
- 2011, fall, I participated as an instructor for VPa 545, Immunopathology.
- I also contribute guest lectures for other courses (most semesters; documented below)

Patents:

- Sultana, ST, Beyenal, H, Call, DR, Fransson, BA. Electrochemical reduction or prevention of infections. Application # Application #20180207301, Issued 26 July 2018.

- Besser, TE, Call, DR, Sawant, AA, Eberhart, L, Brayton, KA, Orfe, LH. Microcin and Uses Thereof. Patent Number 9,492,500. Issue Date: 11/15/2016.
- Call, DR, Orfe LH. Microcin and Uses Thereof. Patent Number 10,022,423. Issue Date: 7/17/2018.
- Call, DR, Orfe LH. Microcin and Uses Thereof. Patent Number 10,220,071 B2. Issue Date: 5 March 2019.

Postdocs, students, staff and visiting scholars (since July 2000):

Postdoctoral Fellows:

1. Dr. Sylvia Omulo, May 2017 to 2018. Currently a Clinical Assistant Professor at Washington State University.
2. Dr. Mark Caudell (U.S.), May 2016 to 2018. Currently working for the FAO, Nairobi, Kenya.
3. Dr. Murugan Subbiah (India), September 2013 to August 2018. Currently working for Maryland Department of Health.
4. Dr. Svetlana Lockwood, June 2016 to June 2018. Entered private sector.
5. Dr. Petronella Hove (Zimbabwe), August 2015 to October 2017. Currently a postdoctoral fellow at University of Colorado.
6. Dr. Zhe Zhao (China), October 2012 to July 2015. Currently a Professor at HoHai University in Nanjing, China. Dr. Zhao is the director for a newly established institute for marine biology.
7. Dr. Shannon Mitchel (U.S., 0.5 FTE), January 2014 to June 2015. Later taught at University of Alabama (Mobil, AL) before moving to a private firm in Pullman, WA.
8. Dr. Abdul Lone (Canada), January 2013 to November 2014; left for a postdoctoral fellowship at University of Saskatchewan, Canada, and later returned to WSU for a postdoctoral fellowship in VMP, September 2015—pres.
9. Dr. Jim Deringer (U.S.), October 2010 to July 2012.
10. Dr. Xiaohui Zhou (China), September 2008 to June 2010; tenured Associate Professor at the University of Connecticut.
11. Dr. Rajesh Subaschandrabose (India), August 2008 to July 2009.
12. Dr. Devendra Shah (India), Oct 2005 to May 2008; Associate Professor, VMP, WSU.
13. Dr. Artashes Khachatryan (Armenia), January 2006 to June 2007; private veterinary practitioner.
14. Dr. Min-Su Kang (South Korea), Jan 2007 to Jan 2008; federal scientist in South Korea.
15. Dr. Marilyn Soule (Zimbabwe), October 2002 to July 2005; currently a K-12 teacher.

Completed graduate students:

1. Shao Lu (U.S.), Ph.D. program, NIH Biotechnology training fellow, ARCS fellow and DRADS fellowship recipient, joined lab in August 2012. Prelim completed spring 2015. Thesis defended April 2018. Currently working as a scientist for the USDA-ARS (Illinois).
2. Azeza Falghoush (Libya), Ph.D. program, joined lab in January 2012. Failed first preliminary exam attempt, 12/2015. Passed prelim exam 10/2016. Thesis defended July 2017. Currently working as a postdoc in the Department of Veterinary Microbiology and Pathology, WSU.
3. Sylvia Omulo (Kenya), Ph.D. program, joined lab in August 2013 with support from the Paul G. Allen School for Global Animal Health. Prelim completed spring 2015. Awarded the WSU Graduate School Karen DePauw Leadership Award, spring 2016. Awarded CHAI Research Fellowship, Aug 2016-17. Thesis defended April 2017. Worked as a postdoc in my lab and is now a clinical-track Assistant Professor with oversight over several projects including a CDC-funded antimicrobial-resistance research project in Nairobi, Kenya.

4. Jinxin Liu (China), Ph.D. program; supported by Chinese Scholarship Council Fellowship and USDA grant, joined lab in August 2012; prelim completed fall 2014. Graduate Student travel award, 2015. Best Poster Award at 4th ASM Conference on Antimicrobial Resistance in Zoonotic Bacteria and Foodborne Pathogens, 2015. Thesis defended July 2016. Currently a postdoc at University of California, Davis, Sep 2016 to present.
5. Carla Schubiger (Switzerland), Combined Pathology Residency and Ph.D. Program, enrolled August 2009 and joined lab in November 2009; prelim exam completed July 2012. Thesis defended December 2014. Currently a postdoc a research assistant professor at Oregon State University, Feb 2015 to present.
6. Seth Nydam (U.S.), Ph.D. program, WSU Biotechnology Training Program trainee. Joined lab in March 2009 and was supported by an NIH Immunology Training grant (May 2009-Dec 2011) after which he was supported by a competitive USDA-AFRI Graduate Student Fellowship (2012). Preliminary exam complete, July 2010. Defended thesis 3/14. Completed a postdoctoral fellowship at Arizona State University, Tempe, Arizona, 8/2014 to fall 2015 before taking a fulltime position as an ASU Clinical Veterinarian.
7. Karol Gliniewicz (Poland), Ph.D. program, enrolled August 2008, co-chaired with Dr. Kevin Snekvik. Preliminary exam complete Nov 2010 and dissertation defended in March 2013. During his graduate program Karol was selected as a participant in the Catalyzing the Doctorate program at WSU Graduate School (2009, 10), and he was awarded the Mr. & Mrs. Delbert Caldwell Graduate Student Scholarship in 2011. He also received a WSU GPSA travel grant to present a poster at the annual ASM General Meeting, May 2010. Currently a postdoctoral fellow at the University of Idaho, June 2013 to present.
8. Lauren Eberhart (U.S.), Ph.D. program, switched to my lab in August 2010 (from A. Sawant lab). Preliminary exam complete, April 2011. Defense completed in March 2013. During her time in my lab, Lauren was awarded Catalyzing the Doctorate Program funding 2009-11; 3rd place for the William R. Wiley Research Exposition Poster Presentation (2010); 3rd place for the Pfizer Student Research Poster Presentation (2011); Dr. James and Mrs. Lillian Kraft Graduate Fellowship (2011); GPSA grants (2011, 2012) and an ASM Student Travel Grant (2012). Lauren was a postdoctoral fellow at the University of Minnesota between fall 2011 and fall 2014. She subsequently moved to a financial analyst position for a private company, directed a research and development lab for a biofuels company, and is currently an instructor at a community college.
9. Dan Erwin (U.S.), Ph.D., entered VMP PhD program in August 2008, passed preliminary exam in May 2010 and defended thesis in August 2012. Thesis title, "Identification of genes that regulate type III secretion system I of *Vibrio parahaemolyticus* in response to host-cell contact." Committee members included Dr. Troy Bankhead, Dr. Wendy Brown, and Dr. Michael Konkel. At time of completion Dan had one paper accepted for publication and a second manuscript prepared for submission. He is a certified Clinical Microbiologist and a Captain in the US Army. Dan returned to a Washington DC duty station in August 2012 where he was assigned to work in the Department of Experimental Therapeutics dealing with development of anti-malarial drugs and technology management.
10. Murugan Subbiah (India), Ph.D., entered VMP PhD program in January 2008, passed preliminary exam in November 2010 and expected to graduate in December 2011. Thesis title, "Factors involved in the proliferation of *bla*_{CMY-2} plasmid-bearing *E. coli*." Committee members included Dr. Thomas Besser, Dr. Eva Top, Dr. Jeffery Ullman, Dr. Devendra Shah, and Dr. William Sischo. He trained as a postdoc at Texas A&M between Feb 2012 and September 2013 when he rejoined my lab as postdoctoral fellow. He currently works for the Maryland Department of Health.

11. Sonja Lloyd (Canada), Ph.D., entered VMP PhD program in August 2006, passed preliminary exam in November 2007 and graduated in December 2009. Thesis title "Identifying the etiologic agent of strawberry disease in rainbow trout." Committee members included Dr. Thomas Besser, Dr. Lindsay Oaks, Dr. Guy Palmer, and Dr. Kevin Snekvik. Sonja published two papers and completed a postdoctoral fellowship in Galveston, Texas before returning to Canada where she now works in the viticulture industry.
12. Xiaohui Zhou (China), Ph.D., entered August 2004, passed preliminary examination November 2006, graduated September 2008. Thesis title "Regulation of T3SS1 genes in *Vibrio parahaemolyticus* and its involvement in pathogenesis." Committee members included Dr. Terry McElwain, Dr. Srikumaran Subramaniam, Dr. Michael Konkel, and Dr. Thomas Besser. Xiaohui's dissertation work led to three publications. Two additional manuscripts (one published, one in prep) arose from work as a postdoc in my lab before working as a postdoc in Dr. Shah's lab. Xiaohui completed a postdoctoral fellow at Harvard Medical School and he is currently a tenured Associate Professor at the University of Connecticut.
13. Min-Su Kang (South Korea), Ph.D., entered August 2002, passed preliminary exam, June 2004, graduated December 2006. Thesis title, "Fitness-associated genetic traits distinguishing epidemic strains of *Salmonella enterica*." Committee members included Dr. Thomas Besser, Dr. Terry McElwain, and Dr. Guy Palmer. Dissertation work led to three publications. Min-Su is currently a Senior Veterinary Researcher and Supervisor for the Infectious Disease Inspection Division of the Animal and Plant Quarantine Agency, Seoul, Republic of Korea.
14. Artashes Khachatryan (Armenia), Ph.D., entered August 2001, passed preliminary examination May 03, graduated December 2005. Thesis title, "Mechanisms responsible for maintenance of high prevalence of antimicrobial drug resistant *Escherichia coli* in dairy calves." Committee members included Dr. Thomas Besser, Dr. Dale Hancock, and Dr. Terry McElwain. Dissertation work led to four publications. Currently employed as a private veterinarian.
15. Adelaide Warsen (U.S.), M.S., entered August 2002, graduated August 2004; one publication. Worked as a research technician at the University of Washington for a number of years before moving to California.
16. Yi-Chang (John) Chen (Taiwan), M.S., entered August 2005, defended thesis February 2008; one publication. Returned to a clinician veterinary position in Taiwan.
17. Pablo Piñeyro (Argentina), M.S., entered November 2008, graduated August 2010; one publication. He completed a PhD-Combined Residency program at Virginia Tech and is now a tenured Associate Professor at Iowa State University.

Current graduate students:

- Kaitlin Witherell, Ph.D. program, NIH T32 Biotechnology training program, joined lab in July 2017. Prelim completed April 2018. Biotech internship completed summer 2018. Recipient of Poncin Fellowship for 2018 academic year.
- Johannetsy Avillan, Ph.D. program, NIH T32 Biotechnology training fellow. Joined lab in August 2016 with original support from the WSU Graduate School RADS program. Prelim examine completed in fall 2018. Biotech internship completed summer 2019. Recipient of Poncin Fellowship for 2019 academic year.

Completed Graduate committees from the College of Veterinary Medicine (VMP=Veterinary Microbiology & Pathology; VCS=Veterinary Clinical Sciences; VCAPP=Veterinary Comparative Anatomy, Pharmacology & Physiology); SMB=School of Molecular Biosciences:

- Tessa LeCuyer, Ph.D. program, IID, T. Besser and M. Davis, co-chairs, summer 2018.
- Jessica Klein, Ph.D. program, IID, L. Knodler, chair, summer 2018.
- Javier Montano, Ph.D., IID, V. Vadyvaloo, chair, April 2017.
- Julie Schwabe, PMS program, SMB. Defended 14 April 2017.
- Bindu Raghavan, Ph.D. program, VMP, S. Subramaniam, chair, Summer 2016.
- Letizia Tomassini, Ph.D. program, VCS, W. Sischo, chair, Spring 2015
- Carrie Schmidt (Ellis), Ph.D. program, VMP, T. Besser, chair, Spring 2015
- Abirami Kugadas, Ph.D. program, VMP, S. Subramaniam, chair, Fall 2014
- Claire Huntsberry, Ph.D. program, VMP, K. Lahmers, chair, Aug 2014
- Jennifer Santos, MS program, SGAH, V. Vadyvaloo, chair, spring 2014
- Sara Ahmed, M.S. program, SGAH, M. Davis, chair, Aug 2014
- Kim Chiok, M.S. program, VMP, D. Shah chair, Spring 2014.
- Mike Porzio's M.S. program, SBS, E. Crespi, chair, Spring 2014
- Neeraj Suthar, M.S. program, SGAH, M. Davis chair, Dec 2013
- Tarek Adwebbi, Ph.D. program, VMP, Co-chaired with D. Shah, Dec 2013
- Katie Boland, Ph.D. program, VMP, K. Lahmers, chair, August 2013
- Kaitlyn Morse, Ph.D. program, VMP W. Brown, chair, Fall 2011
- Smriti Shringi, Ph.D. program, VMP, T. Besser, chair, Fall 2011
- Renuka Subramaniam, Ph.D., VMP, S. Subramaniam, chair, Fall 2011
- Rubee Bavananthasivam, M.S., VMP, S. Subramaniam, chair, Sum 2011
- Kun Taek Park, Ph.D., VMP, W. Davis, chair, Spring 2010
- Sudarvili Shanthalingam, Ph.D., VMP, S. Subramaniam, chair, Spring 2010
- Dan Righter, MS, VMP, T. McElwain, chair, Summer 2010
- Joshua Ramsay, MS program, VMP, R. Mealey, chair, Fall 2009
- James Stanton, Ph.D., VMP, T. Baszler, chair, Fall 2008
- Josh Daniels, Ph.D., VMP, T. Besser, chair, Spring 2008
- Renu Joseph, M.S, VMP, T. Besser, chair, Fall 2007
- Susan Noh, Ph.D., VMP, G. Palmer, chair, Fall 2007
- Sunshine Lahmers, Ph.D., VCAPP, H. Granzier, chair, Fall 2005
- Caron Smith Pruiett, M.S., VCS, T. Besser, chair, Summer 2004
- Margaret Davis, Ph.D., VCS, D. Hancock, chair, Fall 2002
- Wayne Muraoka, M.S., VMP, M. Borucki, chair, Fall 2002

Completed graduate committees from other units (EECS=Electrical Engineering and Computer Science; CEBE = Chemical Engineering and Biosystems Engineering; CEE=Civil and Environmental Engineering; SBS=School of Biological Sciences; BSE=Biological Systems Engineering; SMB=School of Molecular Biosciences; COP=College of Pharmacy; FWR=Fish and Wildlife Resource, University of Idaho):

- Abu Chowdhury, Ph.D. program, EECS, S. Broschat, chair, fall 2019.
- Banafsheh Molki, Ph.D. program, Chemical Eng, H. Beyenal, chair, fall 2019.
- Dwanna White, Ph.D. program, Chemistry, C. Berkman, chair, spring 2019
- Jennifer Roulette, PhD program, Anthropology, M. Quinlan, chair, spring 2019
- Ruhnaz Kashfi, Ph.D. program, IBC, D. Gang, chair, spring 2018.
- Mia Mae Kiamco, PhD program, Chemical Eng, H. Beyenal, summer 2018.
- Ara Jo, MPH program, University of Washington, P. Rabinowitz, chair, 2017

- Anika Larson, MPH program, University of Washington, P. Rabinowitz, chair, June 2017
- Julie Schwabe, PSM, Mol BioSciences, Black & Wyrick advisors, spring 2016
- Sujala Sultana, Ph.D. program, CEBE, H. Beyenal, chair, spring 2016
- Emily Davenport, Ph.D. program, CEBE, H. Beyenal, chair, summer 2016
- Erhan Atci, Ph.D. program, CEBE, H. Beyenal, chair, spring 2016
- Christy Crudo, Ph.D. program, Interdisciplinary, J. Preston, spring 2015
- Caitlin Price, Ph.D. program, Dept of Crop and Soil Sciences, S. Jones, chair, spring 2014
- Derrick Samuelson, Ph.D. program, SMB, M. Konkel, chair, Dec 2013
- Amy Long, Ph.D. program, FWR, K. Cain, chair, defended in December 2012, but delayed graduation until May 2013 to gain additional research and teaching experience.
- Ozlem Istanbulu, Ph.D. program, Chemical Engineering and Biosystems Engineering, H. Beyenal, chair, October 2012.
- Yunyun Zhou, Ph.D. program, EECS, S. Broschat, chair, summer 2012.
- Da Meng, Ph.D., EECS, S. Broschat, chair, spring 2009
- Preeti Malik, Ph.D., SMB, M. Konkel, chair, spring 2008
- Ben LaFrentz, Ph.D., FWR, K. Cain, chair, fall 2007
- Bo Hu, Ph.D., BSE, S. Chen, chair, summer 2007
- Sabine Teske, Ph.D., COP, P. Lawrence, chair, spring 2006
- Erik Coats, Ph.D., CEE, F. Loge, chair, summer 2005
- Neeraj Suthar, M.S. program, SGAH, M. Davis, chair, fall 2013
- Srilkeha Nannapaneni, M.S. program, Chemical Engineering and Biosystems Engineering, H. Beyenal, chair, spring 2012.
- Tarah Johnson, MS program, FWR, K. Cain, chair, fall 2010
- Jennifer Allen, M.S., CEE, M. Beutel, chair, spring 2009
- Jennifer Stewart, M.S., SBS, A. Storfer, chair, summer 2008
- Nicole Lindstrom, M.S., FWR, K. Cain, chair, fall 2007
- Mark Leach, M.S., EECS, S. Broschat, chair, spring 2007
- Binhu Li, M.S., Statistics, Nairanjana Dasgupta, chair, spring 2005
- Brandi Wallis, M.S., of CEE, F. Loge chair, fall 2002

Ongoing graduate committees:

- Abdelgader El Haddar, Ph.D. program, Chemistry, D. Gang, chair, prelim completed 2016.
- Yaojing Qiu, Ph.D. program, Bioengineering, S. Chen, chair, prelim completed fall 2019.
- Eduardo Sanchez, Ph.D. program, Chemical Eng, H. Beyenal, chair, 2019.
- Matthew Mietchen, Interdisc. IIDP, Lofgren, chair, 2019.

Nelson Mandela African Institution of Science and Technology (NM-AIST):

I was integrally involved with the following thesis projects (defended in 2016):

- Beatus Lyimo, PhD, Molecular epidemiology of antibiotic resistant *Escherichia coli* and *Salmonella* isolates from water sources of northern Tanzania.
- Bernadether Rugumisa, MS, Prevalence of antibiotic resistant *Escherichia coli* obtained from free-range and commercial chickens in Arusha District, Tanzania.
- Gaspari Mwanyika, MS, Load and antibiotic resistance of *Escherichia coli* and *Salmonella* in goat meat from selected slaughterhouses in Arusha, Tanzania.
- Rehema Mrutu, MS, Surface contamination of beef carcasses with resistant *Escherichia coli* and *Salmonella* in Arusha, northern Tanzania.
- Catherine Luanda, MS, The load and prevalence of antibiotic resistant *Escherichia coli* and *Salmonella* on swine carcasses in Arusha, Tanzania.

NIH NCRR Summer Research Program for Veterinary Students, NHLBI Summer Research Program for Ethnic Minority Students, WSU-CVM Summer DVM Research Fellows, and other summer student research:

- Chantelle Kambholja, DVM student, Washington State University; summer research fellowship applicant (January 2017, sporadic employment fall 2017).
- Laura Kroger, DVM student, Washington State University, research experience (2017-2018).
- Kelsey Brown, DVM student, Washington State University; summer research fellowship to work with Sylvia Omulo in Nairobi, Kenya (summer 2015).
- Mentored Joey Redmond as an Honors College-sponsored summer research experience at NM-AIST, Tanzania. Joey work on my NSF-EEID project including both lab and field experience.
- Matt Sammons, Washington State University, summer 2013, 2014; stationed in Kisumu, Kenya where he assisted with a human-animal microbiome project.
- Jacob Brandvold, Washington State University, summer 2013
- Kate Stevens (Gunderson), Washington State University, summer 2011; continued working including a two-month research externship with collaborators at the Nelson Mandela African Institute of Science and Technology (Arusha, TZ). This latter work, funded by the Allen School, was part of her DVM senior thesis for which I served as mentor and for which she defended in March 2013.
- Jessica Bailey, Tuskegee University, Auburn, AL, summer 2009
- Sophie Aschenbroich, University of Georgia, summer 2008
- Nicole Lindstrom, Washington State University, summer 2008
- Lisa Otto, Washington State University, summer 2007
- Sara Dobry, Washington State University, summer 2007
- Peter Plescia, University of Illinois, summer 2005; co-author for a manuscript published in *Northwest Science*
- Tremon Bell, Mississippi State University, summer 2004
- Adesola Odunayo, Oklahoma State University, summer 2003
- Marlene Bakko, WSU DVM student, November 2001 to April 2003, Morris Animal Foundation Fellow, co-author on a paper published in *Journal of Clinical Microbiology*, 2003.
- Karen Chan, Colorado State University, summer 2002

WSU McNair Scholars Program:

- Jennifer Elmore (Leader), August 2003 to December 2005. Jennifer completed one project concerning the physics of microarray hybridizations and in 2005 she studied the interaction between amoebae and *Listeria monocytogenes*. Her efforts earned co-authorship on a paper published in *Environmental Microbiology*, 2007.

WSU Honors College Students:

- James Volz, fall 2013 to fall 2015; Honors student and SMB STAR student. James investigated several alternative hypotheses that could explain accumulation of deleterious mutations in the florfenicol antibiotic resistance gene, *floR* (documented in multiple strains of *E. coli* and *Salmonella*).
- Owen Strom, November 2010 to May 2014. Owen's thesis involved development and validation testing of a new protocol for isolating, archiving and shipping *E. coli* from fecal samples. The goal of this work was to develop a very simple, limited-resource technique that could be applied to research projects in developing countries; thesis defended fall 2012.

- Deven Tokuno, December 2010 to 2013. Deven worked on a project (supported by in part by ARC funds) to determine if imported foods serve as a potential conduit for introducing novel antibiotic resistance genes into the food supply. She received a second-place poster competition award in the Molecular, Cellular, and Chemical Biology section of the inaugural SURCA poster competition (March 30, 2012, Pullman), and she received an Honor's College summer research scholarship in 2012. Deven was awarded the Norma C. Fuentes and Gary M. Kirk Undergraduate Research Award, Fall 2012.
- Jonathan Bliggenstorfer, January 2009 to May 2012. Jonathan is studying the mechanism behind enhanced resistance to the antibiotic florfenicol in *E. coli* and *Salmonella*. He defended his thesis in spring 2011 and passed with distinction. Jonathan received an Auvil Scholarship at WSU and he received a second place poster competition award in the Molecular, Cellular, and Chemical Biology section of the inaugural SURCA poster competition (March 30, 2012, Pullman).
- Samantha Lane, June 2002 to May 2004 (co-advised with J. Evermann). Passed Honor's Thesis defense (25 Feb 04) and her work was also designated as "Pass with Distinction" by the Honors College Council; thesis work has been published in *Biosensors and Bioelectronics*, 2004.

WSU Center for Integrated Biotechnology Undergraduate Research Fellows:

- Amelia Lanier, summer 2007 (with Dr. Shira Broschat) with subsequent work as time slip employee and as a full-time technician.

Other student mentoring and employment:

- Chloe White, WSU undergraduate research student, spring 2020
- Ember Tran, WSU undergraduate research student, spring 2020
- Ravikiran Keshavamurthy, WSU IID rotation student, fall 2019.
- Stephanie Johnson, WSU IID rotation student, fall 2019.
- Katelin Jackson, WSU IID rotation student, fall 2018.
- Claire Jacobsen, WSU undergraduate, time slip, summer 2018-spring 2019; STAR, Honors.
- Catherine Bardon, WSU undergraduate, time slip, fall 2016 to spring 2017.
- Catherine Elizabeth, WSU undergraduate, time slip, spring 2017.
- Avila Nelly Adriana, WSU undergraduate, time slip, spring 2017.
- Kenzie Webb, WSU undergraduate, time slip, fall 2015 to fall 2016.
- Jose Guizar, WSU ChemEng undergraduate, time slip, fall 2015 to spring 2016.
- Jacob Mallery WSU SMB undergraduate, time slip, fall 2015 to spring 2016.
- Mia Kiamco, WSU ChemEng PhD student (Biotech rotation), fall 2015.
- Samuel Uzoechi, WSU ChemEng PhD student (Biotech rotation), fall 2015.
- Riley Marcus, Pullman High School student, summer 2015.
- Daniel Mobley, WSU undergraduate, time slip, fall 2011 to spring 2015.
- Charice Espiritu, WSU undergraduate, time slip, 2011 to spring 2015.
- Dawanna White, WSU Biotechnology training grant student rotation, spring 2015.
- Haley Varnum, Pullman High School student, summer 2012, 2013, 2014, 2015.
- Owen Strom, WSU Honor's College, time slip, 2010 to May 2013.
- Deven Tokuno, WSU Honor's College, worked time slip, 2010 to 2012.
- Samantha Nelson, WSU undergraduate, worked time slip, fall 2011 to 2013.
- Mayra Blanco, Pullman High School student volunteer, fall 2012-2013.
- Melissa Foley, WSU Molecular BioSciences Ph.D. graduate student rotation, fall 2011.
- Autumn Callendar, WSU undergraduate, worked time slip, fall 2011.
- Leslie Davis, undergraduate student, worked time slip, summer 2010.

- Aby Green, WSU Molecular BioSciences Ph.D. graduate student rotation, summer 2010.
- Monika Mulder, WSU Molecular BioSciences M.S. graduate student rotation, 01-04 2010.
- Derrick Samuelson, WSU Molecular BioSciences Ph.D. rotation, Oct to Dec 2009.
- Kassandra Garner, WSU undergraduate student, August 2008 to May 2010
- Margaret Besser, McAlister undergraduate student summer 2008, 2009
- Karou Hatate, WSU undergraduate student, summer 2009
- Abdul Abate, WSU undergraduate student, summer 2008
- Allison Fischer, WSU undergraduate student, June 2006 to May 2012. Allison's efforts were recognized as a co-authorship with a paper published by Dr. Thomas Besser (fall 2007, *Journal of Clinical Microbiology*). Allison is a co-author on another paper in review.
- Helen Chen, Pullman High School student, summer 2007
- Elizabeth Strom, WSU undergraduate student, spring 2007 to 2008
- Ried Peckham, WSU undergraduate student, spring 2007 to 2008
- Autumn Ramsrud, Molecular Biosciences senior thesis project, 2005. Continued from fall 2004 through spring 2006 and published a first-authored paper in *J of Fish Health*, 2007.
- Kristin Rice, Pullman High School student, fall 2002 to May 2004
- Sophia Pacheco, Ph.D. rotation, fall 2003.

Visiting Scholars and Students:

- Dupe Hambolu, Dept. Veterinary Public Health and Preventative Medicine, University of Ibadan, Ibadan, Nigeria, Oct 2018 to April 2019. Dupe (Deborah) received training on MIC and PCR assays that she used to characterize *Salmonella* isolates as part of her dissertation studies.
- Cibeli Viana, Departamento de Veterinária Universidade Federal de Viçosa, Viçosa, MG, Brazil, April to December 2018. Cibeli is received basic training on whole-genome sequencing in support of her Ph.D. thesis on anti-biotic resistant *Salmonella enterica* from Brazil.
- Tamoor Hamid Chaudhry, Department of Microbiology, Government College University, Faisalabab, Punjab, Pakistan, March 2018 to August 2018. Tamoor is receiving basic training in molecular microbiology, including sequencing and PCR, in support of his Ph.D. thesis on antibiotic-resistant *Klebsiella pneumoniae* from Pakistan.
- Adesoji Ayodele Timilehin, Department of Microbiology, University of Ibadan, Nigeria, September 2011 to February 2012. Timi received basic training in molecular and microbiology in support of his Ph.D. studies on dissemination of antibiotic resistance traits in municipal water systems. He returned for additional training in September 2016.
- Beatus Lyimo, PhD student, Nelson Mandela African Institute for Science and Technology. Beatus trained in my lab between early November 2014 and late January 2015. Work included antibiotic resistance testing, PCR genotyping, sequencing, and conjugation assays. Data collected during this training period was used as part of his Ph.D. thesis.
- Jane Lwoyero, DVM, Nairobi, Kenya. Dr. Lwoyero was awarded a USDA-USAID Borloug Fellowship to spend three months training in my lab (May-July). This included an opportunity to attend the General Meeting of ASM in Washington, D.C. Training included antibiotic resistance testing, basic molecular methods (PCR) and HPLC fundamentals. She returned to Nairobi where she oversees a new food safety analytics lab.
- Zhe Zhao, Associate Professor, Key Laboratory of Marine Bio-resources Sustainable Utilization, South China Sea Institute of Oceanology, Chinese Academy of Sciences, GuangZhou, China. Dr. Zhao was funded by a Chinese Research Council Fellowship to

work one year in my lab (Oct 2012-Sep 2013) on T3SS in *Vibrio parahaemolyticus* and *V. alginolyticus*. I have recruited Dr. Zhao to remain with me for an additional 18 months to continue work on *Vibrio* as well as lead a component of my microcin research project.

- My lab provided training for *E. coli* isolation (fecal) and antibiotic resistance testing for Remigi Swai (3 days; from Tanzania), Sylvia Omulo (3 days; from Kenya), and Deogratius Mshanga (2 weeks; from Tanzania) in September 2011.
- Elizabeth Amosun, Dept. of Veterinary Microbiology & Parasitology, University of Ibadan, Nigeria, June 2011. Dr. Amosun spent four weeks in my lab where she received training for handling fecal isolates of *E. coli* and antibiotic resistance testing for *E. coli* and *Salmonella*.
- Femi Isaac Olatoye, Dept. Veterinary Public Health and Preventative Medicine, University of Ibadan, Nigeria, December 2010 to March 2011 and during the month of March 2012. Dr. Olatoye received a MacArthur Foundation travel grant for a three month stay to receive training in molecular characterization of enteric bacteria and to analyze a collection of isolates (*Salmonella* and *E. coli*) from Nigeria.
- Chijioke Nsofor, graduate student from the University of Nigeria, April 2010 to September 2010. Received basic training in characterization of *E. coli* (antibiotic resistance, PFGE, plasmid profiling, microarray hybridization). This was a self-funded research experience and a manuscript is being prepared in support of his dissertation research and this data was also employed in an NSF grant application (December 2010).
- Radka Pribylova, graduate student from the University of Veterinary and Pharmaceutical Sciences Brno, Czech Republic, May 2008 to August 2008. Received basic training in design, construction, and application of glass-based microarrays. Ms. Pribylova's visit was funded through a grant from the European Commission Specific Support Action EU-US SafeFood.
- Alice Bungay, Assistant Professor, College of Public Health, University of the Philippines, Manila. Fulbright Fellow and visiting scientist, October 2006 to March 2007. Received training in basic molecular biology (PCR, PFGE, DNA processing, microarrays) and additional training from the Bacteriology and Immunohistochemistry sections of the Washington Animal Disease Diagnostic Laboratory.
- Lisa Barco, DVM, 11 August to 1 Sept 2006, from Centro Nazionale di Referenza per le Salmonellosi Istituto Zooprofilattico Sperimentale delle Venezie Viale dell'Università, Legnaro, Italy. Received training on BioPlex platform (bead arrays).
- Santiago González, Ph.D. student, University of Santiago, Spain, fall 2002. Received training on planar microarray production and application. A manuscript from this effort was published in the *Journal of Clinical Microbiology*, 2004.

Technical Staff

- Jennifer Cundiff, B.S., May 2018 to present.
- Claudia Deobold, B.S., October 2016 to May 2018.
- Lisa Orfe, B.S., October 2004 to July 2016; CVM staff award in 2008 & 2014
- Johannetsy Avillan, October 2015 to August 2016 (enrolled in IID program)
- Owen Strom, B.S., October 2013 to June 2015
- Robert Nelson, B.S., October 2009 to July 2010
- Jessica Bailey, B.S., DVM student, October 2009 to July 2010
- Amelia Lanier, B.S., June 2009 to July 2010
- Patrick Friel, B.S., October 2007 to June 2010

- Stacey LaFrentz, B.S., December 2002 to 2007, CVM staff award in 2006
- Melissa Krug, B.S., October 2000 to July 2005, CVM staff award in 2003
- Murugan Subbiah, DVM, January 2007 to November 2007
- Melissa Oatley, M.S., October 2002 to May 2004
- Edward Kuhn, B.S., April 2004 to August 2005
- Deborah Duricka, B.S., October 2004 to May 2007; returned to full-time graduate studies.
- Michael Satterwhite, Ph.D., October 2005 to 2007

Current society memberships:

- American Association for the Advancement of Science
- American Society for Microbiology
- Northwest Scientific Association (Lifetime member)

Professional positions and activities (July 2000 to present):

Grant Reviews:

- 2019: *Ad hoc* reviewer, NERC Science of the Environment (UK), Dec 2019.
- 2019: *Ad hoc* reviewer, IREACH, WSU, Oct 2019.
- 2019: *Ad hoc* reviewer, ECOS SUD CHILI 2019 (France), Nov 2019.
- 2019: *Ad hoc* reviewer, National Science Foundation, EEID program, April 2019.
- 2018: Panel member, NIH Special Emphasis Panel/Scientific Review Group 2019/01 ZRG1 PSE-D (55) R DC, Oct 2018.
- 2018: Panel member, NIH Special Emphasis Panel Exploration of Antimicrobial Therapeutics and Resistance, 2018/10 ZRG1 IDM-Y (82), June.
- 2018: *Ad hoc* reviewer, National Pork Board, January.
- 2017: *Ad hoc* reviewer, National Geographic Society, November.
- 2017: Panel member, NIH Clinical Research and Field Studies of Infectious Diseases Study Section, 2018/01 CRFS, Chicago, IL, 12-13 October 2017.
- 2017: Panel member, NIH Topics in Bacterial Pathogenesis IDM-B (81), San Diego, CA, 9 March.
- 2016: Panel member, USDA-NIFA AFRI Animal Health program, Washington, D.C., 1-3 November.
- 2016: *Ad hoc* reviewer, International Foundation for Science, May 2016; concerning establishment of a large-scale antibiotic resistance surveillance program.
- 2016: Panel member, National Science Foundation, 10-12 Feb 2016, Washington, DC.
- 2016: Panel member for NP 212 Panel 6: Antimicrobial resistance, for USDA ARS 108: Soil and Air National Program (conducted spring-summer, 2016).
- 2015: Panel chair for NP 108 Panel 14: Antibiotic resistance in cattle (2016) of the USDA, ARS 108 Food Safety (animal and plant products) National Program (conducted fall 2015).
- 2015: Panel member, NIH 2016/01 ZRG1 IDM-S (81). Special emphasis AREA applications in Infectious Diseases and Microbiology; 9 Nov 2015, Washington, DC.

- 2015: *Ad hoc* reviewer, NSF Ecology and Evolution of Infectious Disease, October 2015.
- 2015: *Ad hoc* reviewer, Global Health and Vaccination Programme, April 2015.
- 2012: Reviewer for WSU-ARC grant; ran grant panel for WSU-CVM Research Committee; *Ad hoc* reviewer for one proposal, Portuguese Foundation for Science and Technology. I declined invitations to other grant panels due to sabbatical travel.
- 2011: *Ad hoc* reviewer for USDA Small Business Innovation Research (SBIR) program. USDA-ARS review panel for internal ARS projects involving antimicrobial resistance. *Ad hoc* reviewer for Ohio Sea Grant program.
- 2010: University of Minnesota intramural program, Bioproducts and Biosystems Engineering. USDA-ARS Intramural grant review panel for projects involving antimicrobial resistance. Panel member for AFRI Food Safety STEC CAP review panel, which is the first program of its kind from USDA. I also served as the panel manager for a biology section of the WSU New Faculty Seed Grant during spring 2010.
- 2009: NSF SBIR Marine Aquatic Biotechnology review panel.
- 2008: NSF SBIR Marine Biotechnology review panel; *Ad hoc* review for NSF Research Initiation and Career Advancement proposal; *Ad hoc* reviewer for NSF/USDA-CSREES Microbial Genome Sequencing Program; *Ad hoc* reviewer for U.S. Civilian Research and Development Foundation.
- 2007: USDA-NRI Functional Genomics review panel; University of Alabama Board of Trustees; WSU New Faculty Seed grants (panel manager); Austrian Research Promotion Agency.
- 2006: WSU New Faculty Seed grants (panel manager); Austrian Science Fund; National Science Foundation; California Sea Grant Program; CSREES SBIR program.
- 2005: *Ad hoc* reviewer for USDA-NRI Epidemiological Approaches to Food Safety; WSU New Faculty Seed grants (panel manager); *Ad hoc* reviewer for Microbes Section of the Functional Genomics of Agriculturally Important Organisms (NRICGP); *Ad hoc* reviewer for USDA SBIR program.
- 2004: *Ad hoc* reviewer for Fonds zur Förderung der wissenschaftlichen Forschung, Austria, Postdoctoral Fellowship; NRICGP Functional Genomics of Agriculturally Important Organisms; Auburn University intramural grant program WSU New Faculty Seed grants (panel manager); USDA-NRI Epidemiological Approaches to Food Safety; American Institute of Biological Sciences; NRICGP Food Safety Post-Harvest Section; Helsinki University Environmental Research Centre, HERC, University of Helsinki, Finland, Intramural grant review; Binational Agricultural Research and Development Fund.
- 2003: *Ad hoc* reviewer for USDA-CREES SBIR grant (n=1); USDA-NRICGP Epidemiology-Food safety section; NOAA University of New Hampshire; New York Sea Grant program; National Research Council, Institute for Marine Biosciences (Canada).
- 2002: *Ad hoc* reviewer for USDA-NRICGP; National Institutes for Water Resources (USGS); U.S. Civilian Research and Development Foundation; Ohio State University Research Enhancement Competitive Grants Program.
- 2001: National Heart, Lung and Blood Institute RFA 00-014 review panel.

Manuscript reviews:

- Number of reviews by year: 2020: n = 2; 2019: n = 14; 2018: n = 26; 2017: n=20; 2016: n=26; 2015: n=19; 2014: n=28; 2013: n=14; 2012 n=22; 2011 n=29; 2010 n=27; 2009 n=36; 2008 n=24; 2007 n=16; 2006 n=17; 2005 n=17; 2004 n=10; 2003 n=3; 2002 n=3; 2001 n=2.
- I have provided manuscript reviews and technical report reviews for the following journals and organizations (n=85): *Advances in Bioinformatics*, *African Journal of Biochemistry Research*, *African Journal of Food Science*, *African Journal of Microbiology Research*, *American Journal of Veterinary Research*, *Analytical Chemistry*, *Antimicrobial Agents and Chemotherapy*, *Antonie van Leeuwenhoek Journal of Microbiology*, *Applied and Environmental Microbiology*, *Aquaculture Research*, *Brazilian Journal of Microbiology*, *Biochimica et Biophysica Acta*, *Biologia*, *BioTechniques*, *Biotechnology and Bioengineering*, *BMC Genomics*, *BMC Microbiology*, *BMC Research Notes*, *British Microbiology Research Journal*, *Bulletin of the European Association of Fish Pathologists*, *Canadian Journal of Microbiology*, *Cell Host and Microbe*, *Cellular Microbiology*, *Current Issues in Molecular Biology*, *Diseases of Aquatic Organisms*, *Emerging Infectious Diseases*, *Environmental Biotechnology*, *Environmental Microbiology*, *Environmental Pollution*, *Environmental Science and Technology*, *Epidemiology and Infection*, *FEMS Microbiology Letters*, *Fish and Shellfish Immunity*, *Food and Agriculture Organization of the United Nations (FAO)*, *Food Microbiology*, *Future Medicine*, *Frontiers Cellular and Infection Microbiology*, *Frontiers in Microbiology*, *Gene*, *Genome Research*, *Global Health: Science and Practice*, *IEEE Transactions on Microwave Theory and Techniques*, *Immunological Investigations*, *Infectious Agents and Cancer*, *International Journal of Food Microbiology*, *International Journal of Molecular Sciences*, *Journal of Agricultural and Food Chemistry*, *Journal of Antimicrobial Chemotherapy*, *Journal of Aquatic Animal Health*, *Journal of Bacteriology*, *Journal of Biotechnology*, *Journal of Clinical Microbiology*, *Journal of Dairy Science*, *Journal of Environmental Quality*, *Journal of Environmental Chemical Engineering*, *Journal of Fish Diseases*, *Journal of Fish Health*, *Journal of Hazardous Materials*, *Journal of Immunological Methods*, *Journal of Medical Microbiology*, *Journal of Medical Virology*, *Journal of Microbiological Methods*, *Journal of the World Aquaculture Society*, *Letters in Applied Microbiology*, *mBio*, *mSphere*, *Marine Biotechnology*, *Mediators of Inflammation*, *Medicina*, *Microbial Ecology*, *Microbiology*, *Molecular and Cellular Probes*, *Molecular Microbiology*, *Nature Materials*, *Nucleic Acids Research*, *Scientific Reports*, *Research in Veterinary Science*, *Philippine Agricultural Scientist*, *Plasmid*, *PLoS ONE*, *Preventative Veterinary Medicine*, *Probiotics and Antimicrobial Proteins*, *Proceedings of the National Academy of Sciences USA*, *Science of the Total Environment*, *Soil Biology and Biochemistry*, *Water Research*, *Veterinary Immunology and Immunopathology*, *Veterinary Microbiology*, *Veterinary Sciences*, *Virulence*, *Zoonoses and Public Health*.

Search Committees (WSU):

- Chair, search committee for SGAH faculty position in antimicrobial resistance and epidemiology, 2017.
- Gene and Linda Voiland School of Chemical Engineering and Bioengineering, Washington State University, Summer 2015 to January 2016 when search canceled after budget reallocation process.
- Chair of search committee, SGAH, Fall 2014 to June 2015. Position filled Dr. Eric Lofgren. The remaining position is being restructured for advertisement in Fall 2016.
- Vice President for Research, Washington State University, Fall 2013.
- Search committee for SGAH-School of Economic Sciences dual faculty hire, fall 2013-June 2015.

- Co-chair of search committee, Quantitative Epidemiologist, Paul G. Allen School for Global Animal Health. I served during spring 2012 and stepped down to committee member after beginning sabbatical leave on July 1st. Position filled by Dr. Jennifer Zambriski.
- Technician recruitment committee, Dr. Devendra Shah, spring 2012.
- Washington Animal Disease Diagnostic Laboratory and Paul G. Allen School for Global Animal Health, Clinical Microbiologist search committee, 2011-12 academic year.
- WSU (OGRD) Proposal Manager, 2009 academic year.
- School for Global Animal Health Infectious Disease and Immunology faculty position, 2009 academic year.
- Avian Diagnostic Lab Director, VMP-WADDL, 2008 academic year.
- Immunology search committee (2 recruitments), VMP, spring 2007.
- Bacteriologist search committee, VMP, 2006 academic year.
- Public Health search committee, VMP, 2006 academic year.
- Administrative search committee, OGRD, 2006 academic year.
- Combined Microbiology and Biochemistry search committee, School of Molecular Biosciences, 2006 academic year.
- Soil Microbiologist, Soils Dept., WSU, fall 2004 to spring 2006.
- Bioinformatics Faculty Search Committee, 2004 academic year. This seven member committee interviewed candidates for faculty positions in the College of Engineering, College of Agriculture, and College of Sciences at Washington State University (>125 applicants).
- Microbial Genomics faculty position, VMP, 2001 academic year.
- Neuroscientist faculty position, VCAPP, 2001 academic year.

Recruitment of guest speakers:

- 2016, fall, Dr. Marguerite Pappaioanou, CDC (retired)
- 2016, fall, Dr. Eric Mitema, University of Nairobi, SGAH seminar
- 2015, fall, Dr. Louise Matthews, SGAH seminar
- 2014, fall, Dr. Timothy Straub, SGAH seminar
- 2014, spring, Dr. Marilyn Roberts, SGAH seminar
- 2014, spring, Dr. Daniel Haydon, Immunology and Infectious Disease seminar series
- 2012, spring, Dr. Louise Matthews, Immunology and Infectious Disease seminar series
- 2010, fall, Dr. Andreas Bäuml, Austin & Joan Larsen Distinguished Visiting Lecture, VMP
- 2008, fall, Dr. Jean Bouldin, guest seminar, VMP
- 2008, fall, Dr. Josh Turse, potential Immunology Training Grant Postdoctoral Fellow
- 2008, fall, Co-hosted visiting postdoctoral fellow candidate, Issmat Kassem
- 2007, spring, Christopher Secombes, Advances in Immunology seminar series
- 2006, spring, Dr. Thomas Whittam, Ecology and Evolution of Infectious Disease
- 2006, spring, Dr. Laura Brown, Center for Reproductive Biology
- 2006, spring, Xenogen Corp., bioimaging applications
- 2003, spring, Co-hosted Dr. Richard Sayre, VMP-IBC-CIB
- 2003, spring, Dr. Mark McBride, Center for Reproductive Biology
- 2002, spring, Dr. Daniel Remick, Distinguished Lecture Series in Advances in Immunobiology

Current Department, College, and University Service:

- 2017-pres, Awards committee for the Washington State University Sahlin Faculty Excellence Award for Research, Scholarship and Arts (committee chair 2018-19)
- 2017-pres, Washington State University Showcase Executive Committee

- 2015-pres, Executive Committee, Tissue Imaging and Proteomics Core
- 2013-pres, CVM Dean's Tenure and Promotion Advisory Committee
- 2013-pres, Allen School safety committee
- 2010-pres, NIH-WSU Biotechnology Training Program Executive Committee
- 2012-pres, Allen School Tenure and Promotion Committee

Previous institutional service:

- 2014-2019, CVM Faculty Executive Committee
- 2019, Strategic Research Initiatives Working Group at WSU (Office of Research)
- WSU Honors Council, 2013-2019.
- 2013-2019, Immunology and Infectious Diseases graduate program exec committee; served as director 5/2017 to 5/2019.
- 2016, fall, Faculty Senate Graduate Studies Committee (co-chair 2018-2019)
- Executive Committee for WSU Community Health Analytics Initiative, August 2016-June 2017 (program eliminated with budget cuts).
- Served as an *ad hoc* reviewer for CVM intramural research program and Poncin candidate selection, spring 2015 & 2016; served as committee member fall 2016.
- Assisted with Gates Foundation inaugural graduate program meeting at the Nelson Mandela African Institute for Science and Technology, 1/15.
- WSU Inform Technol Strategic Advisory Comm (ITSAC), spring 2015-fall 2015.
- Provost Faculty Affairs Workgroup on Urban Campus Issues, fall 2014 to spring 2015.
- Provost Annual Review Task Force, (Feb 2014-spring 2015).
- Office of the Vice President for Res, Res Infrastructure Comm, 120-day study, fall 2014.
- Invited to present at a WSU Foundation Trustees reception, Seattle, WA, 26 Sept 2013.
- The Allen School hosted a joint University Federal of Viçosa-University of Washington-Washington State University exploratory symposium on one health, 13 September 2013, Allen Center, Pullman, WA. I was participated/presented at this event and will follow-up graduate studies opportunities with our partners
- Liaison for WSU Graduate School and the University of Viçosa, Brazil, 2014-2015.
- VMP Graduate Studies Committee, August 2007 to June 2012. I served as the point-of-contact for traditional graduate student inquiries about VMP. I also worked to develop an electronic record collection system for annual student evaluations, and to develop a professional development course that is applicable across all CVM units. These latter two efforts were being coordinated with the CVM-Umbrella Committee. The Umbrella Committee is an *ad hoc* committee assembled by the Dean to examine questions about how to better integrate our respective graduate programs within the college.
- WSU School of Mol Biosci Graduate Student Recruitment Committee, Jan 2010 to 2011.
- WSU Honors College Council 2006 to 2009.
- Veterinary Medical Research Scholars Steering Committee, 08/2007 to 2010 (VM508P).
- *Ad hoc* committee to explore a framework for establishing a Pathogen Discovery Laboratory for WADDL, 2010.
- WSU Research Infrastructure Committee, spring 2009 to 2010. This was an *ad hoc* advisory committee for Dr. Howard Grimes, WSU Vice Provost for Research.
- *Ad hoc* review committee for Institutional Biosafety Committee concerning revisions to BAF, April-May 2006

Other professional service:

- External examiner for Clara Fernández-Álvarez, Universidade de Santiago de Compostela; Ph.D. thesis, "Molecular Diagnostic and Biological Methods: An alternative in the Prevention and Control of Bacterial Fish Diseases," 2019

- External reviewer for promotion and/or tenure at:
 - The Islamia University of Bahawalpur, Pakistan, 2019 (associate to professor)
 - UPEI, Canada, 2015 (associate to professor)
 - University of Minnesota, fall 2013 (associate to professor)
 - Wayne State University, fall 2013 (assistant to associate rank)
 - University of Minnesota, fall 2012 (assistant to associate rank)
 - Washington State University, summer 2010 (assistant to associate, non-tenure)
 - Oregon State University, fall 2009 (assistant to associate)
 - University of Toledo, fall 2008 (assistant to associate)
 - FDA scientist GS-14 promotion, 2007
- Associate Editor, *Critical Reviews in Microbiology*, October 2006 to 2008.
- Served on an NIH sponsored scientific misconduct investigative committee for the WSU Research Integrity Officer, summer 2008 to spring 2009.
- Periodically serve as acting chair in support of VMP chair, 2008 to 2010.
- Drafted preliminary VMP Graduate Program academic review (with S. Hines), July 2008
- Participated in Infectious Diseases Peaks proposal, 2007.
- Have served as mentor or on mentor committees for Dr. Viveka Vadyvaloo, Dr. Devendra Shah, Dr. Nehal, Abu-Lail (Chemical Engineering), Dr. Troy Bankhead.
- Served as external examiner for Ph.D. Dissertation from the Adelaide Graduate Center, University of Adelaide, South Australia. I was selected as a reviewer because of my experience with *Listeria monocytogenes*, bacteria-protist interactions, and work with plasmid biology; June 2007.
- Member of the *Flavobacterium* 2007 conference steering committee, Shepherdstown, WV, 2-4 May 2007. Besides assisting with organization, I was the lead-PI for a successfully funded USDA-NRI conference grant to support this effort (\$10,000).
- Trustee, Board of Directors, Northwest Scientific Association, March 2000 to 2003; elected and served as association Treasurer, 2003-2013.
- Member Ag/Vet committee for Task Force on Antimicrobial Resistance, Tacoma-Pierce Co. Dept. Public Health, January 2001 to 2006.
- Executive Committee for the Ecology and Evolution of Infectious Diseases seminar series (Initiation of Collaboration grant through WSU), fall 2005 through spring 2006. This group submitted an NSF IGERT pre-proposal in spring 2006.
- External examiner for Honors Theses, 2004-2006, 2008-2009, 2011, 2013, 2014, 2016.

Teaching, guest lectures/service and community service:

- 2020: Guest lecture on antimicrobial resistance for VM 543, Vet Public Health, WSU.
- 2019: Evaluator for undergraduate research grants, WSU Office of Undergraduate Research.
- 2019: Guest lecture on antimicrobial resistance for Bioengineering, WSU.
- 2017: Guest lecture for BSCI 548, Evolutionary Ecology of Populations, WSU.
- Serving as a 4-H/FIRST mentor for the Palouse Area Robotics Team (2014—pres).
- 2012, 2014-2018: Judge for Showcase for Undergraduate Research and Creative Activities (SURCA), WSU.
- 2009-2011, 2015-2016: Judge for WSU-NIH Biotechnology training program poster session.
- 2006-2012, 2014, 2016: Judge for Franklin Elementary School Science Fair, Pullman, WA.
- 2016: provided building tours and guest seminar for WSU CVM Class of '67 reunion.
- 2008, 2015-16, 2019: Judge for WSU Wiley Exposition (renamed GPSA Research Expo).
- 2015, 2016, 2017, 2018: Guest lecture, UW-ENVH 444-544, Antibiotic resistance: moving beyond the prudent use paradigm (and variations of this theme).

- 2015: Guest lecture for Intro Microbiology, MBios 101, WSU Tri-Cities, 26 Feb 2015;
- 2012, 2014-5: Guest lectures for DVM epidemiology course (VM 543).
- 2015: Guest lecture for public health course at University of Washington (P. Rabinowitz).
- 2014: Guest lecturer for Honors Mathematics (13 Oct 2014).
- 2010-11, 2013: Guest lecturer for Protein Biotechnology (MBioS 574).
- 2012: Guest presenter for microbiology residency seminar.
- 2011: Guest lecturer for Philosophy of Science (Philos 350/451).
- 2011: Guest lecturer for International Veterinary Medicine (VM 501).
- 2010: Guest lecturer for VM 508, MBioS 541, and Math/Biol 494.
- 2008: Seminar, Pathogenesis Journal Club.
- 2008: Invited panel member, Dodo exposition on evolutionary theory, 28 Oct, Pullman.
- 2007: Guest lecturer for Stats 565.
- 2006: Judge for 4H public speaking, state competition, Pullman, WA, 11 May.
- 2005, 2008: Invited panel member, WSU-OGRD sponsored Faculty Development Series focused on writing grant proposals and new faculty orientation.
- 2005: Guest lecture for CE 584 on microarrays and microbial source tracking.
- 2004: Taught genomics section of Immunopathology.
- 2003: Guest lectures for Neuro 555, 4 hours, 25-26 September.
- 2003: Judge for graduate student poster session; Center for Multiphase Environmental Research, April, Pullman.
- 2002-03: Guest lectures, Mechanisms of Disease.
- 2002: Guest lecture, Fish Health/diagnostics, Univ. Idaho, Dr. Ken Cain.
- 2001: Guest lecture, MBioS 446, Epidemiology.
- 2001: FDIU seminar, Pullman, WA, July 2001, "Microarray applications in molecular epidemiology."

Grants during graduate training:

- WSU College of Sciences student minigrant, 1996; WSU Graduate School Fellowship, 1995; Mazamas grant, 1994; The Nature Conservancy grant, 1993; Sigma Xi grant, 1993; Northwest Scientific Association grant, 1993; WSU Graduate School travel grant, 1993.

Intramural funded grants, July 2000 to present:

Completed:

1. Washington State University Research Advancement Challenge. Call, Broschat, Davis, and Shah, "Challenging conventions to combat the spread of antibiotic resistance," \$65,000, 10/12-10/13.
2. **Call**, Brayton, and Besser. Harnessing microcins for control of scours in neonatal calves. Center for Sustaining Agriculture and Natural Resources, Biologically-Intensive Agriculture and Organic Farming (BIOAg) program. \$29,000, March 2012-February 2013.
3. College of Veterinary Medicine, WSU. Call. Host-cell contact-dependent regulation of type III secretion systems, \$20,000, 7/11-6/12.
4. WSU and UI Aquaculture initiative. Cain and **Call** (Co-PIs). Comparative genomics and proteomics of *Flavobacterium psychrophilum* and regulation of host genes during a protective immune response. Competitive renewals have been funded annually 2002-2010 when funding was available (\$782,000 cumulative direct costs split 50:50 between Cain and Call). Remaining funding expires 8/12 and the program has been eliminated.

5. WSU-UI Aquaculture Initiative, **Call**, Snekvik, Cain, and LaPatra, "Identifying the etiologic agent of Strawberry Disease in rainbow trout," \$105,000 cumulative with competitive annual renewals that were funded in 2006, 2008, 2009 and 2010. Funding expires 8/12 and the program has been eliminated.
6. College of Veterinary Medicine, WSU. **Call**, "Interaction between *Listeria monocytogenes* and free-living amoebae," \$17,367, funded, 7/05—6/06.
7. WSU and UI Aquaculture initiative. **Call** and Cain. Development of sandwich ELISA to detect *Flavobacterium psychrophilum*, \$12,000, 10/03—6/05.
8. College of Veterinary Medicine, WSU. **Call**, Besser and Hancock. The role of calf-adapted *Escherichia coli* in maintenance of antibiotic resistance in dairy calves, \$20,000, 7/03—6/04.
9. WSU and UI Aquaculture initiative. **Call** and Stanek. Sensitivity and specificity of a DNA microarray detector for *Renibacterium salmoninarum*, \$36,000, 2/02—6/03.
10. State of Washington Water Research Center, WSU. **Call**, Cain, Hotchkiss, and Loge. Development of a comprehensive monitoring protocol to characterize the concentration and associated health risks of salmonid pathogens suspended in water, \$20,000, 3/02—2/03.
11. College of Veterinary Medicine, WSU. **Call**, Hancock and Besser. The role of calf-adapted *Escherichia coli* in maintenance of antibiotic resistance in dairy calves, \$60,000, 7/01—6/03.
12. WSU and UI Salmon Restoration Program, Center for Reproductive Biology. **Call** and McElwain. Microarray detection of multiple pathogens in salmonid populations, renewed annually, \$87,000 cumulative, 8/01—8/04.
13. I participated in VMP proposal to secure four new RA positions for new faculty in VMP (2-year program; D. Prieur, Director). The proposal was funded through the WSU Graduate School with first students August 2008 to May 2010. This program was extended to May 2011.
14. CVM Intramural Program, **Call**, "Does excreted ceftiofur or florfenicol contribute to amplification and maintenance of antibiotic resistant bacteria in cattle herds?," \$20,000, 7/12-6/13.
15. **Call**, Frear and Ullman. Using biochar to sequester antibiotic residues during food animal production. Washington State Agricultural Research Center, \$50,000, Jan 2014-Dec 2014.
16. **Call**. Turning the tables on antimicrobial resistance. College of Veterinary Medicine, intramural grant program. \$20,000, 7/14-6/15.
17. **Call** et al. Community-based Assessment of Antibiotic Resistant *Escherichia coli* in Quetzaltenango, Guatemala. Allen School funded project, \$250,000.
18. **Call** et al. Employing optides as a novel class of antimicrobials for human and veterinary medicine, WSU-CVM intramural award, 7/18-6/19, \$20,000.

Extramural funded grants, July 2000 to present

Completed:

1. USDA-AFRI. TE Besser, MA Davis, D Moore, W Sisco and DR **Call**. Differential Epidemiology and Ecology of Clinical and Bovine-biased Genotypes of *Escherichia coli* O157:H7. \$1,249,750, 11/09—10/12. <no resources for Call lab>

2. USDA-AFRI Graduate Fellowship. Nydam (and **Call**). Identifying Signal Motifs for Transport Through the Type III Secretion Systems of *Vibrio parahaemolyticus*. \$75,000, 9/2011-8/2013 <funded stipend for Seth Nydam, graduate student in the Call lab.>
3. Morris Animal Foundation. Srikumaran, Knowles, Call and Dassanayake. Prevention of Bighorn Sheep die-offs due to pneumonia. \$143,812, 7/2010-6/2012.
4. National Pork Board. Sawant, Brayton and **Call**. Application of a novel inhibition mechanism to control *E. coli* O157:H7 and other non-O157:H7 pathogenic *E. coli*. \$40,000, 10/1/2010—10/01/2011.
5. Western Regional Aquaculture Center (WRAC), Cain, Call, and LaPatra, “Coldwater disease prevention and control through vaccine development and diagnostic improvements,” \$398,174, awarded 1/08-8/11.
6. NIH NIAID (contract N01-AI-30055) for the Food and Waterborne Diseases Integrated Research Network. Hancock, Besser, Borucki, Call, Cobbold, Gay, Gay, and Loge. Regional Dissemination of Food and Water-borne Zoonotic Enteropathogens in the Pacific Northwest (\$9.9 M), December 2002—October 2009. Subprojects within this program.
 - **Call**. Subtyping *Listeria monocytogenes* using a suspension array, \$338,186, 9/04—8/07.
 - **Call**. Transcriptional signatures of epidemic *L. monocytogenes*, \$293,600, 10/04—9/07.
 - **Call**, Besser, Borucki, and Cobbold. Detection and characterization of phenotypic and genotypic traits for newly emergent zoonotic enteric pathogens, \$990,000, 2/04—2/07.
 - **Call**, Konkell, and Bej, “*Vibrio parahaemolyticus* Type III Secretion Proteins,” \$390,385 (\$216,331 to Call lab), 9/06—2/09.
 - Davis, **Call**, and Besser, “Characterization of bacterial antimicrobial resistance using a validated DNA microarray,” \$440,400, 9/06—1/10.
 - ZW013-07, Konkell, **Call**, and Mansfield, “Classification (virotyping) of pathogenic *Campylobacter jejuni*,” \$1,170,765 (\$387,712 to Call lab), 3/07—2/10.
 - ZW014-07, **Call**, Besser, Broschat, and Top, “Epidemiology of antibiotic resistance plasmids,” \$1,238,796; awarded 8/07—10/2010.
 - ZW015-07, Straub, Bartholomew, and **Call**, “Pathogenesis of circulating norovirus strains,” \$546,671 (\$146,671 to Call lab), 1/08—8/2010.
 - Shah, **Call**, Davis, and Besser, “Differential virulence of *Salmonella enteritidis*,” \$267,726, 1/08—8/2010.
7. USDA-NRI. **Call**, Wiens, LaPatra, and Hunnicutt. “Flavobacterium 2007,” conference grant, \$10,000, awarded.
8. Murdock Foundation grant for purchase of a state-of-the-art field emission scanning electron microscope for the Francheschi Microscopy and Imaging Center, WSU, \$484,681, funded 2007, M. Knoblauch Director (DCall participating faculty).
9. NRI 32.0 Food Safety. Konkell, **Call**, Dhillon, and Smit. “Investigation of the *Campylobacter jejuni* CadF protein as an agent for reducing *Campylobacter* carriage in chickens,” Amount requested \$399,714, 10/2006--9/2009.

10. USDA-NRI Food Safety. Konkel, **Call**, Joens, and Parker. Comparative genomics, transcriptomics, and proteomics of pathogenic and non-pathogenic isolates of *Campylobacter jejuni*, \$325,000, 10/05—9/08.
11. USDA-NRI. **Call**, Loge and Gay. Identifying host-specific markers of fecal pollution using mixed genome microarrays, \$314,000, 9/02—8/06 (one-year no-cost extension).
12. USDA-NRI. **Call**, Besser and Hancock. The role of calf-adapted *Escherichia coli* in maintenance of antibiotic resistance in dairy calves, \$257,964, 12/03—12/06 (one-year no-cost extension).
13. USDA-NRI. Besser, Hancock, Sisco, and **Call**. Clonal dissemination of antimicrobial resistant *Campylobacter jejuni* and *Escherichia coli*, \$1.3 M, 11/01—10/05 (one-year, no-cost extension).
14. Morris Foundation. **Call**, Besser and Hancock. Genotyping antimicrobial resistance using DNA microarrays, \$7,500, 9/01—8/02.
15. Beyenal, **Call**, Majors, Abu-Lail, and Fransson. Fundamental research at the nano- and microscale to understand how biofilms interact with wounds in the presence of hyperosmotic agents. FY11 DOD Congressionally Directed Medical Research Programs, 10/12-9/14, \$1,000,000.
16. National Beef Check-Off Program. **Call**, “Exploiting antibiotic resistance mechanisms to combat antibiotic resistance,” 30,000, 10/13-6/14.
17. Hess et al. A Systems Biology Approach to study the response of a synthetic rumen microbiome to feed additives and its bearing on atmospheric methane. Pacific Northwest National Laboratory, EMSL user grant, Oct 2013-Sep 2014. <no direct costs to Call lab>
18. **Call**. Antibiotic residues in poultry products and *in situ* selection for antibiotic resistant bacteria. USDA Foreign Agricultural Service, Borlaug Fellowship Program, \$29,796, 2/14-12/14.
19. USDA-AFRI. Besser, **Call**, Davis, Hovde, Johnson, Lahmers, Sisco, French, Spencer, Sawant. Reducing Seasonal Increases In *Stec* Prevalence In Cattle To Reduce Human Exposures And Improve Public Health. \$2,447,156, 1/1/2011—1/1/2016. <app. \$375,000 direct costs to Call lab>.
20. Broschat, **Call**, Anantharaman. Next-Gen Clustering: Fast and Accurate Ways to Cluster Proteins. NSF-ABI Innovation Program, \$707,041, 10/13-9/16.
21. Davis, Besser, **Call**. The Role of Bacteriophages in the Dissemination of Novel Antibiotic Resistance Genes. USDA-AFRI Exploratory Research Program. \$100,000, 5/2015-4/2016.
22. **Call** et al. Sanitation and its relationship with antimicrobial-resistant *Escherichia coli* in an urban slum in Nairobi, Kenya. Allen School funded project.
23. Sisco, **Call**, Davis, Ehrlinger, Moore, Wenz. Integrating biology, psychology, and ecology to mitigate antibiotic resistance in food animal production systems. USDA-NIFA-AFRI 2015-68003-22998. \$2,249,974, 2/15—1/18.
24. **Call** et al. Ecological and socio-economic factors affecting the emergence, persistence, and dissemination of antibiotic resistance in the greater Serengeti ecosystem. NSF DEB1216040, 10/12-9/18, \$2,500,000.
25. **Call** and Beyenal. Tetracycline resistance: The Achilles' heel of antibiotic resistance? NIH 5R21 AI117200, \$415,250. 10/15-6/18.

26. Nero and **Call**. Investigation of the contradictory results by genotypic and phenotypic methods to assess the antimicrobial resistance by microbial pathogens with relevance to food and veterinary medicine. Programa Ciencia Sem Fronteiras (Brazil), \$20,000, 9/14—2/19.
27. Loch et al. Flavobacterial diversity and its effect on disease in aquaculture. USDA-NIFA-AFRI. Subcontract RC105806WSU to \$78,563 total subcontract to Call, 9/15-10/18.
28. **Call**. Contract with I2 Air Fluid Innov to test novel iodine perfusion technology for water sanitation. \$2,500. Jan-Dec 2018.

Research in progress:

1. Rabinowitz et al. The Healthy Dairy Worker Study, NIH PAR-15-353 Centers for Agricultural Safety and Health (U54 OH007544). Subcontract UWSC9329 to **Call**, \$106,328, 9/16-8/21.
2. Njenga, **Call**, Lofgren, Marsh, McElwain, Mwangi, Yoder. Conducting communicable disease research in Kenya. 2017-2022. CDC 3U01GH002143-01W1, \$150,000 to DRC in 2017; \$1.1 M to DRC in 2018; contract renewable for five years.
3. **Call** et al. An integrated surveillance platform for infectious diseases and their burden on antibiotic resistance. 2017-2022. CDC U01GH002241, Total costs Y1 \$350,000; Y2 \$375,000.
4. Lofgren et al. ORAP Team Planning Grant: Resistance epidemiology modeling initiative. \$50,000 direct costs, 2020.

Grant proposals submitted in 2019-20:

1. **Call**, Clowers, Lofgren. Predicting the emergence of novel antibiotic-resistance genes. NSF EEID program, in review, \$1,820,757 total costs, 2019, *in review*.
2. **Call** et al. Determining the effects of pediatric vaccination status on the burden of antimicrobial-resistant commensal organisms in a Guatemalan community. Wellcome Trust, \$277,198 total costs. Notified that award is pending.
3. Palmer et al. NIH D43 Zoonotic and Emerging Infectious Disease Training Program. Scored 11 by panel, awaiting NOA.
4. Loch et al. Understanding *Flavobacterium psychrophilum* intraspecific diversity as it pertains to disease management and prevention in aquaculture. Michigan State University prime, reviewed and informed that funding pending, but no final confirmation.
5. Clark et al. MRI: Acquisition of a high-performance computing cluster to advance a 21st century vision of the land-grant university mission. \$1,934,329 total costs, 2019. *In review*. JIT information submitted.
6. Islam et al. Effects of water, sanitation and hygiene interventions on fecal carriage of antibiotic-resistant bacteria in Bangladeshi households with children. NIH R01 application, in review.
7. Nawani, P, and DR **Call**. Design and synthesis of a novel, low-cost antibacterial polymer coating. Gates Foundation; not funded.
8. Omulo, S, et al. Environmental selection for multidrug-resistant *Salmonella* Typhi. Gates Foundation; not funded.
9. Nawani and Call. Design and synthesis of a novel low-cost antibacterial polymer coating. Washington Research Foundation, not funded.

10. Gilliam Fellowship application for J. Avillan, 2019. Not funded.

Participation in training grants

1. T32 GM08336, Faculty participant, NIH NIAID Biotechnology Training Program, Ray Reeves Program Director, 09/03-08/11. Margaret Black program director 2011 to 2017. Michael Kahn current director. Renewed for 5 years, Sep 2019.
2. T32 AI07025, Faculty participant, Immunology/Infectious Diseases Training Program, G. Palmer Program Director. In 2015 this was renewed for years 35-39 of this training program; 2T32AI007025, \$1,922,656 direct.
3. T35 RR007049, Faculty participant, NCCR Short-term Training grant for veterinary students, Prieur and Ritter Program Directors, "Students in Health Professional Schools," \$229,720 direct costs (\$248,095 total) for most recent renewal, total project period 09/30/1990—01/31/2011.

Contracts and other funded activities:

Contracted by the Asotin County Conservation District to test water samples from Asotin Creek for the presence of host-specific fecal markers; \$3,317 total, 2008.

Additional proposals:

Since July 2000 I submitted an additional 127+ pre-proposals, proposals and training grant proposals WSU intramural competitions, nonprofit foundations and other granting organizations that were not funded.

Thesis titles:

- **Call, DR.** 1990. Home-range and habitat use by California Spotted Owls (*Strix occidentalis*) in the Sierra Nevada. M.S. thesis, Dept. Wildlife, Humboldt State University, Arcata, CA.
- **Call, DR.** 1997. Microsatellite characteristics and population structure for two anurans (*Rana luteiventris* and *Hyla regilla*). Ph.D. thesis, Dept. Zoology, Washington State University, Pullman, WA.

Peer-reviewed publications:

According to Google Scholar, 30 December 2019, 212 publications:

- Total citations = 10,024
- h-index = 52
- i10-index = 144

Pre-2000:

1. **Call, DR, RJ Gutiérrez and J Verner.** 1992. Foraging habitat and home-range characteristics of California Spotted Owls in the Sierra Nevada. *Condor* 94:880-888.
2. **Call, DR, JG Hallett, SG Mech, and M Evans.** 1998. Considerations for measuring genetic variation and population structure with multilocus fingerprinting. *Molecular Ecology* 7:1337-1346.
3. **Call, DR and JG Hallett.** 1998. PCR primers for microsatellite loci in the anurans *Rana luteiventris* and *Hyla regilla*. *Molecular Ecology* 7:1085-1087. PMID: 9711868.

4. **Call**, DR and DG Remick. 1998. Low molecular weight heparin is associated with greater cytokine production in a stimulated whole blood model. *SHOCK* 10:192-197. PMID: 9744647.
5. Ebong S, DR **Call**, G Bolgos, DE Newcomb, J Granger, M O'Reilly, and DG Remick. 1999. Immunopathologic responses in non-lethal sepsis. *SHOCK* 12: 118-126. PMID: 10446892.
6. Ebong, S, D **Call**, G Bolgos, J Nemzek and D Remick. 1999. Immunopathologic alterations in murine models of sepsis of increasing lethality. *Infection and Immunity* 67:6603-6610. PMID: 10569781.
7. Granger, J, M O'Reilly, DR **Call**, S Ebong, A Taur, B Williams, M Nauss, J Millican and DG Remick. 1999. A sandwich enzyme-linked immunoabsorbent assay for measurement of picogram quantities of murine granulocyte colony-stimulating factor. *Journal of Immunological Methods* 225:145-156. PMID: 10365791.
8. LaHaye, WS, RJ Gutiérrez, and DR **Call**. 1997. Nest-site selection and reproductive success of California Spotted Owls. *Wilson Bulletin* 109:42-51.
9. Nemzek, JA, D Newcomb, DR **Call**, and DG Remick. 1999. Plasma interference in an enzyme-linked immunosorbent assay using commercial matched antibody pair. *Immunological Investigations* 28:209-221. PMID: 10453999.

2000:

10. **Call**, DR, M Jacoby, K Rudolf, G Bolgos, C Robbins, and DG Remick. 2000. Detecting wildlife orthologues for tumor necrosis factor (TNF α) and interleukin-6 (IL-6). *Northwest Science* 74:340-345.
11. Nemzek, JA, DR **Call**, SJ Ebong, GR Bolgos, DE Newcomb and DG Remick. 2000. Immunopathology of a two-hit model of acid aspiration lung injury. *American Journal of Physiology. Lung Cellular and Molecular Physiology* 278:L512-L520. PMID: 10710523.
12. Remick, DG, DE Newcomb, GL Bolgos, and DR **Call**. 2000. Comparison of the mortality and inflammatory response of two models of sepsis: lipopolysaccharide vs. cecal ligation and puncture. *SHOCK* 13:110-116. PMID: 10670840.

2001:

13. **Call**, DR, FJ Brockman, and DP Chandler. 2001. Detecting and genotyping *Escherichia coli* O157:H7 using multiplexed PCR and nucleic acid microarrays. *International Journal of Food Microbiology* 67:71-80. PMID: 11482571.
14. **Call**, DR, DP Chandler, and FJ Brockman. 2001. Fabrication of DNA microarrays using unmodified oligomer probes. *BioTechniques* 30:368-379. PMID: 11233606
15. **Call** DR, Nemzek JA, Ebong SJ, Bolgos GR, Newcomb DE, Wollenberg GK and Remick DG. 2001. Differential local and systemic regulation of the murine chemokines KC and MIP2. *SHOCK* 4:278-284. PMID: 11303726.
16. **Call**, DR, JA Nemzek, SJ Ebong, GR Bolgos, DE Newcomb, and DG Remick. 2001. Ratio of local to systemic chemokine concentrations regulates neutrophil recruitment. *American Journal of Pathology* 158:715-721. PMID: 11159209.
17. Chandler, DP, J Brown, DR **Call**, JW Grate, DA Holman, L Olson, MS Stottlmyre, and CJ Bruckner-Lea. 2001. Automated immunomagnetic separation and microarray detection of

E. coli O157:H7 from poultry carcass rinse. International Journal of Food Microbiology 70:143-154. PMID: 11759752.

18. Remick, DG, LB Green, DE Newcomb, SJ Garg, GL Bolgos, and DR **Call**. 2001. CXC Chemokine redundancy ensures local neutrophil recruitment during acute inflammation. American Journal of Pathology 159:1149-1157. PMID: 11549608.
19. Remick DG, DR **Call**, SJ Ebong, DE Newcomb, P Nybom, JA Nemzek, GE Bolgos. 2001. Combination immunotherapy with soluble tumor necrosis factor receptors plus interleukin 1 receptor antagonist decreases sepsis mortality. Critical Care Medicine 29:473-481. PMID: 11373406.
20. Small, JA, DR **Call**, FJ Brockman, TM Straub, and DP Chandler. 2001. Direct detection of 16S rRNA in soil extracts using oligonucleotide microarrays. Applied and Environmental Microbiology 67:4708-4716. PMID: 11571176.

2002:

21. Davis WC, RL Konzek, K Haas, DM Estes, MJ Hamilton, DR **Call**, V Apostolopoulos, and IF McKenzie. 2002. Use of the mannan receptor to selectively target vaccine antigens for processing and antigen presentation through the MHC Class I and Class II pathways. Annals of the New York Academy of Sciences 969:119-125. PMID: 12381575.
22. Kingsley, MT, TM Straub, DR **Call**, SC Wunschel, DS Daly and DP Chandler. 2002. Fingerprinting closely related *Xanthomonas* pathovars with random nonamer oligonucleotide microarrays. Applied and Environmental Microbiology 68:6361-6370. PMID: 12450861.
23. Loge, FJ, DE Thompson, and DR **Call**. 2002. PCR detection of specific pathogens in water: A risk-based analysis. Environmental Science and Technology 35:2754-2759. PMID: 12099475.
24. Wang X, SJ Ebong, DR **Call**, DE Newcomb, GR Bolgos, and DG Remick. 2002. Calcitonin gene-related peptide partially reverses decreased production of chemokines KC and MIP-2 following murine sepsis. Inflammation 26:167-174. PMID: 12184630.

2003: (trainees are underlined)

25. Borucki MK, MJ Krug, WT Muraoka, and DR **Call**. 2003. Discrimination among *Listeria monocytogenes* isolates using a mixed genome DNA microarray. Veterinary Microbiology 92:351-362. PMID: 12554104.
26. Borucki, M, and DR **Call**. 2003. *Listeria monocytogenes* serovar identification by PCR. Journal of Clinical Microbiology 41:5537-5540. PMID: 14662936.
27. Borucki, MK, JD Peppin, D White, F Loge and DR **Call**. 2003. Variation in biofilm formation among strains of *Listeria monocytogenes*. Applied and Environmental Microbiology 69:7336-7342. PMID: 14660383.
28. **Call**, DR, MK Borucki and FJ Loge. 2003. Detection of bacterial pathogens in environmental samples using DNA microarrays. Journal of Microbiological Methods 53:235-243. PMID: 12654494.
29. **Call**, DR, MK Borucki, and TE Besser. 2003. Mixed-genome microarrays reveal multiple serotype and lineage-specific differences for *Listeria monocytogenes*. Journal of Clinical

Microbiology 41:632-639. PMID: 12574259. *****This paper was selected as one of the top six ASM papers for the month of January 2003 (announced in April issue of ASM News)*****

30. **Call**, DR, MK **Bakko**, MJ Krug, and MC Roberts. 2003. Identifying antimicrobial resistance genes using DNA microarrays. *Antimicrobial Agents and Chemotherapy* 47:3290-3295. PMID: 14506043. See related article by Holzman, D. 2003. Microarray analyses may speed antibiotic resistance testing. *ASM News* 69 (Nov):538-539.
31. **Davis**, MA, DR **Call**, TE Besser and DD Hancock. 2003. Evaluation of pulsed-field gel electrophoresis as a tool for determining the degree of genetic relatedness between strains of *Escherichia coli* O157: H7. *Journal of Clinical Microbiology* 41:1843-1849. PMID: 12734215.
32. **Davis**, MA, DD Hancock, DH Rice, DR **Call**, R DiGiamcomo, M Samadpour, and TE Besser. 2003. Feedstuffs as a vehicle of cattle exposure to *Escherichia coli* O157:H7 and *Salmonella enterica*. *Veterinary Microbiology* 95:199-210. PMID: 12935747.
33. **Davis**, MA, DD Hancock, TE Besser, DH Rice, CJ Hovde, R. DiGiacomo, M. Samadpour, and DR **Call**. 2003. Correlation between geographic distance and genetic similarity in an international collection of bovine fecal *Escherichia coli* O157:H7 isolates. *Epidemiology and Infection* 131:923-930. PMID: 14596534.

2004:

34. Borucki, MK, SH **Kim**, DR **Call**, SC Smole, and F. Pagotto. 2004. Selective discrimination of *Listeria monocytogenes* epidemic strains by a mixed-genome DNA microarray compared to discrimination by pulsed-field gel electrophoresis, ribotyping, and multilocus sequence typing. *Journal of Clinical Microbiology* 42:5270-5276. PMID: 15528725.
35. Cobbold, RN, DH Rice, M Szymanski, DR **Call**, and DD Hancock. 2004. Comparison of Shiga-toxigenic *Escherichia coli* prevalences among dairy, feedlot, and cow-calf herds in Washington State. *Applied and Environmental Microbiology* 70:4375-4378. PMID: 15240323.
36. **González**, SF, MJ Krug, ME Nielson, Y. Santos, and DR **Call**. 2004. Simultaneous detection of marine fish pathogens using multiplexed PCR and a DNA microarray. *Journal of Clinical Microbiology* 42:1414-1419. PMID: 15070982.
37. **Khachatryan**, AR, DD Hancock, TE Besser, and DR **Call**. 2004. Role of calf-adapted *Escherichia coli* in maintenance of antibiotic resistance in dairy calves. *Applied and Environmental Microbiology* 70:752-757. PMID: 14766551.
38. **Lahmers**, S, Y Wu, DR **Call**, S. Labeit, and H. Granzier. 2004. Developmental control of titin isoform expression and passive stiffness in fetal and neonatal myocardium. *Circulation Research* 94:505-513. PMID: 14707027.
39. **Lane**, S., J. Evermann, F. Loge and D.R. **Call**. 2004. Amplicon secondary structure prevents target hybridization to oligonucleotide microarrays. *Biosensors and Bioelectronics* 20:728-735. PMID: 15522587.
40. **Panicker**, G, DR **Call**, MJ Krug, and AK Bej. 2004. Detection of pathogenic *Vibrio* spp. in shellfish by using multiplex PCR and DNA microarrays. *Applied and Environmental Microbiology* 70:7436-7444. PMID: 15574946.

41. Straub, TM, Quinoñez Díaz, MD, CO Valdez, DR **Call**, and DP Chandler. 2004. Using DNA microarrays to detect multiple pathogen threats in water. *Water Science and Technology: Water Supply* 4:107-114.
42. Warsen, A, MJ Krug, S LaFrentz, DR Stanek, FJ Loge, and DR **Call**. 2004. Simultaneous discrimination between 15 fish pathogens using 16S ribosomal DNA PCR and DNA microarrays. *Applied and Environmental Microbiology* 70:4216-4221. PMID: 15240304.
43. Willse, A, TM Straub, S. Wunschel, JA Small, DR **Call**, D Daly, and DP Chandler. 2004. Quantitative oligonucleotide microarray fingerprinting of *Salmonella enterica* isolates. *Nucleic Acid Research* 32:1848-1856. PMID: 15037662.
44. Woodford, NL, DR **Call**, DG Remick, and R Rochford. 2004. Model of angiogenesis in mice with severe combined immunodeficiency (SCID) and xenografted with Epstein-Barr virus transformed B cells. *Comparative Medicine* 54:209-215. PMID: 15134368.

2005:

45. Bae, W, KN Kaya, DD Hancock, DR **Call**, YH Park, and TE Besser. 2005. Prevalence and antimicrobial resistance of thermophilic *Campylobacter* spp. from cattle farms in Washington State. *Applied and Environmental Microbiology* 71:169-174. PMID: 15640184.
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157. Long, A., DR **Call**, and KD Cain. 2015. Comparison of quantitative PCR and ELISA for detection and quantification of *Flavobacterium psychrophilum* in salmonid broodstock. *Diseases of Aquatic Organisms* 115:139-146.
158. Mitchell, SM, M Subbiah, JL Ullman, C Frear, and DR **Call**. 2015. Evaluation of 27 different biochars for potential sequestration of antibiotic residues in food animal production environments. *Journal of Environmental Chemical Engineering* 3 (1):162-169.
159. Omulo, S, SM Thumbi, MK Njenga, and DR **Call**. 2015. A review of 40 years of enteric antimicrobial resistance research in eastern Africa: What can be done better? *Antimicrobial Resistance and Infection Control* 4:1 DOI 10.1186/s13756-014-0041-4.
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161. Sultana, ST, E Atci, JT Babauta, AM Falghoush, KR Snekvik, DR **Call**, and H Beyenal. 2015. Electrochemical scaffold generates localized, low concentration of hydrogen peroxide that inhibits bacterial pathogens and biofilms. *Scientific Reports* 5:14908.
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163. Amed, S, TE Besser, DR **Call**, SJ Weissman, LP Jones, and MA Davis. 2016. Evaluation of two multi-locus sequence typing schemes for *Escherichia coli*. *Journal of Microbiological Methods* 124:57-61.
164. D'Angeli, MA, Baker JB, **Call** DR, Davis MA, Kauber KJ, Malhotra UM, Moore GT, Porter, DA, Porter C, Pottinger P, Stockwell V, Wagner C, Wohrle R, Yoke LH, and P Rabinowitz. In press. Antimicrobial stewardship through a one-health lens: observations from Washington State. *International Journal of Health Governance* 21(3). <selected as the first place winner for the Emerald Publishing awards for excellence, 2017; <http://www.emeraldgroupublishing.com/authors/literati/awards.htm?year=2017>>
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169. Lyimo, B, JJ Buza, M Subbiah, S Temba, H Kipasika, W Miller and DR **Call**. 2016. IncF plasmids are commonly carried by antibiotic resistant *Escherichia coli* isolated from drinking water sources in Northern Tanzania. *International Journal of Microbiology Article* ID 3103672.
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2018:

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202. Deliorman M, FP Gordesli Duatepe, EK Davenport, Emily, BA Fransson, DR **Call**, H Beyenal and NI Abu-Lail. 2019. Responses of *Acinetobacter baumannii* bound and loose

extracellular polymeric substances to hyperosmotic agents combined with or without tobramycin: An atomic force microscopy study. *Langmuir* 35:9071-9083.

203. Kiamco, MM, H Zmuda, A Mohamed, DR **Call**, Y Raveal, R Patel, and H Beyenal. 2019. Hypochlorous-acid-generating electrochemical scaffold for treatment of wound biofilms. *Scientific Reports* 9: 2683.
204. Knupp, C, GD Wiens, M Faisal, DR **Call**, KD Cain, P Nicolas, D. van Vliet, C Yamashita, JA Ferguson, D Meuninck, HM Hsu, BB Baker, L Shen, and TP Loch. 2019. Large-scale analysis of *Flavobacterium psychrophilum* MLST genotypes recovered from North American salmonids indicates both newly identified and recurrent clonal complexes are associated with disease. *Applied and Environmental Microbiology* 85:e02305-18.
205. Liu, J, Z Zhao, JJ Avillan, DR Call, M Davis, WM Sisco, and A Zhang. 2019. Dairy farm soil presents distinct microbiota and varied prevalence of antibiotic resistance across housing areas. *Environmental Pollution* 254:113058.
206. Lu, SY, Graça T, Avillan JJ, Zhao Z, and DR **Call**. 2019. Microcin PDI inhibits antibiotic-resistant strains of *Escherichia coli* and *Shigella* through a mechanism of membrane disruption and protection by homotrimer self-immunity. *Applied and Environmental Microbiology* 85:e00371-19.
207. Rosenkrantz, L, O Amram, MA Caudell, N Schuurman, and DR **Call**. 2019. Spatial relationships between small-holder farms coupled with livestock management practices are correlated with the distribution of antibiotic resistant bacteria in northern Tanzania. *One Health* <https://doi.org/10.1016/j.onehlt.2019.100097>.
208. Viana C, MJ Sereno, K Pegoraro, RS Yamatogi, DR Call, LS Bersot, LA Nero. 2019. Distribution, diversity, virulence genotypes and antibiotic resistance for *Salmonella* isolated from a Brazilian pork production chain. *International Journal of Food Microbiology* 310:108310.
209. Zhang, A, DR **Call**, TE Besser, J Liu, LP Jones, H Wang and MA Davis. 2019. Beta-lactam genes in bacteriophage and bacterial DNA from wastewater, river water and irrigation water in Washington State. *Water Research* 161:335-340.

2020:

210. Hines, SA, J Brandvold, RH Mealey, DR **Call**, and T Graca. *Accepted*. Exposure to ambient air causes degradation and decreased in vitro efficacy of buparvaquone and parvaquone. *Veterinary Parasitology*.
211. Kashfi, R, C Kelsey, DJ Gang, DR Call and DR Gang. *Accepted*. Metabolomic diversity and identification of antibacterial activities of bacteria isolated from marine sediments in Hawai'i and Puerto Rico. *Frontiers in Molecular Biosciences*.
212. Subbiah, M, MA Caudell, C Mair, MA Davis, L Matthews, RJ Quinlan, MB Quinlan, B Lyimo, J Buza, and DR Call. 2020. Antimicrobial-resistant enteric bacteria are widely distributed amongst people, animals and the environment in Tanzania. *Nature Communications* 11:228.

Book chapters:

1. Bartholomew, RA, JR Hutchinson, TM Straub, and DR **Call**. 2015. PCR, real-time PCR, digital PCR and isothermal amplification. Chapter 2.3.2 in Yates, MV, CH Nakatsu, RV Miller

and SD Pillai (eds). Manual of Applied Microbiology, Fourth Edition, ASM Press, Washington, DC. 10.1128/9781555818821.

2. Straub, TM, DR **Call**, C Bruckner-Lea, H Colburn, C Baird, RA Bartholomew, R Ozanich, and K Jarman. 2015. Field application of pathogen detection technologies. Chapter 2.4.1 in Yates, MV, CH Nakatsu, RV Miller and SD Pillai (eds). Manual of Applied Microbiology, Fourth Edition, ASM Press, Washington, DC. 10.1128/9781555818821.
3. Bouldin JG, DH Shah, CA Morales, DR **Call**. 2011. Evolutionary trends associated with niche specialization as modeled by whole genome analysis of egg-contaminating *Salmonella enterica* serovar Enteritidis. Pages 91-106 In: Porwollik, S, Editor. *Salmonella: From Genome to Function*, Caister Academic Press, Norfolk, UK.
4. Shah, DH, S Shringi, TE Besser, and DR **Call**. *Escherichia coli* O157:H7. In: Liu, D, Editor. 2009. *Molecular Detection of Foodborne Pathogens*, CRC Press, Chapter 27.
5. Sadowsky, MJ, DR **Call**, and JW Santo Domingo. 2006. The Future of Microbial Source Tracking. Pages 235-277 in MJ Sadowsky and JW Santo Domingo (ed.), *Fundamentals of Microbial Source Tracking*. ASM Press, Washington DC.
6. Wesley, IV, M Borucki, DR **Call**, D Larson, and L Schroeder-Tucker. 2003. Detection and diagnosis of *Listeria* and listeriosis in animals. In: *Current topics in food safety in animal agriculture*. Iowa State Press.
7. LaHaye, WS, Gutiérrez, RJ and DR **Call**. 1992. Demography of an insular population of Spotted Owls (*Strix occidentalis occidentalis*). Pages 803-814 In D McCullough and R Barrett, editors. *Wildlife 2001: Populations*. Elsevier Press.

Non-peer reviewed publications

1. **Call**, DR, C Schubiger, K Snekvik, and KD Cain. What causes strawberry disease in rainbow trout? Trout Talk, Fall 2011.
2. Cain, K, and DR **Call**. Coldwater Disease Research. Trout Talk, Fall 2011.
3. **Call**, DR, KR Snekvik, and KD Cain. Strawberry disease Research. Waterlines, Spring 2010, p9.
4. Cain and **Call**. Coldwater disease. Waterlines Spring 2010, p10.
5. Elmore, Jennifer Leader and Samantha Lane and Douglas **Call**. Effects of Probe Length and Secondary Structure on DNA Microarray Hybridizations: Implications for Design of Pathogen Detection Assays. WSU McNair Journal. (3) Fall 2005. p 68-80.
6. **Call**, DR. 2001. DNA microarrays – their mode of action and possible applications in molecular diagnostics. *Veterinary Sciences Tomorrow*, Issue 3, Aug 2001.

Invited Seminars and Consultancies

- Keynote speaker, UW Tele-Antimicrobial Stewardship (UW TASP), Ellensburg, WA. "Risk factors for colonization with antibiotic-resistant bacteria in Guatemala and East Africa," 28 April 2020.
- Invited seminar, SNAP-AMR conference, The Kibo Palace, Arusha, TZ. "Shared risk factors for antimicrobial resistance in Tanzania and Guatemala," 11 Dec 2019.

Invited seminar, Universidad del Valle de Guatemala, Guatemala City, Guatemala. "Emergence of new antibiotic-resistance genes in a competitive environment," 1 October 2019.

Invited presentation, En el X Congreso National de Epidemiologia, Ciudad de Guatemala, "Evaluación comunitaria de *Escherichia coli* resistente a los antibióticos en Quetzaltenango, Guatemala 2017-2019," 2-3 October 2019.

Invited presentation, USDA-ARS, Ames, Iowa. Antibiotics and food animals: Challenges and Opportunities, 4 June 2019.

Invited presentation, Inaugural Research Grand Rounds, Elson S. Floyd College of Medicine, Spokane, WA, "How Culture and Context Complicate the Fight Against Antimicrobial Resistance: Lessons from Abroad," 19 February 2019.

Invited presentation Federal University of Viçosa, Viçosa, Brazil. The role of culture and circumstances in the fight against antimicrobial resistance, 4 February 2019.

Invited presentation, "Antibiotics and food-animals: Challenges and opportunities," University of Washington, Tele-Antimicrobial Stewardship Program, July 2018. Invited to remain a regular participant with the program conference calls.

Invited presentation, "How Culture and Circumstances Complicate the Fight Against Antimicrobial Resistance: Lessons from Tanzania," 2018 APHL annual meeting, Pasadena, CA, July 2018.

Invited seminar and facility tours, "Antimicrobial resistance is a wicked problem," Pork Board, De Moines, IO, June 2018.

Served as a subject matter expert for consultation with Global Good (Bill and Melinda Gates Foundation) in March and July, 2018.

Invited panel member, "Farm to beside -- Antimicrobial resistance: Challenges in agriculture and human health," January 25th, 2018, Fred Hutch Cancer Center.

Invited seminar at College of Oceanography, Hohai University, Nanjing, China, 10 January 2018, "Discovery of the mechanism underlying a successful probiotic against bacterial coldwater disease in rainbow trout," and "Identifying the most important drivers of antibiotic resistance in food-animal production."

Invited seminar, "Risk factors for antimicrobial resistance differ for Maasai, Arusha and Chagga households," 30 November 2017, Nelson Mandela African Institution of Science and Technology, at NM-AIST, Arusha, Tanzania.

Invited seminar, "Antibiotic resistance and the collision between biology, culture and circumstance," University of Washington Environmental Health Seminar Series, 9 November 2017, Seattle, WA.

Invited seminar, "Exploring the many dimensions of antimicrobial resistance," 17 September 2017, Federal University of Viçosa, Viçosa, Brazil.

Invited seminar, "All things antimicrobial resistance," 27 June 2017, Pacific Northwest National Laboratory, Richland, WA,

Invited seminar, Universidad del Valle de Guatemala, "Large-scale studies of community-level antibiotic resistance," 30 May 2017, Guatemala City, Guatemala.

Invited panel member, "Antimicrobial resistance – on the precipice," Life Science Washington, Seattle, WA, 24 May 2017.

Washington State University Distinguished Faculty Address, "Tackling the wicked problem of antimicrobial resistance," 30 March 2017, Pullman, WA.

Invited seminar, Washington State University IREACH, "Tackling the wicked problem of antibiotic resistance," 22 Feb 2017, Seattle, WA.

Invited speaker, CRWAD. Reservoirs of antibiotic-resistant *Escherichia coli* in production environments: an opportunity for intervention? 4-6 December 2016, Chicago, IL.

Invited speaker, special session on antimicrobial resistance, Washington State Veterinary Medical Association, Pacific Northwest Veterinary Conference, Oct 9, 2016, Spokane, WA. "Identifying the most important drivers of antibiotic resistance."

Invited speaker, Washington State Department of Health, Zoonotic and Vector-borne Disease Workshop, 22 September, 2016, Ellensburg, WA. "A one-health perspective on antibiotic resistance in Tanzania."

Invited speaker, Gates Foundation/Global Good Quarterly meeting on antimicrobial resistance, 6 September 2016, Bellevue, WA.

Invited contributor to public meeting #3, Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria, Washington, D.C., 22 June 2016, conference call presentation.

Invited talk for the National Institute of Food and Agriculture and the USDA's AMR Interagency Working Group, 13 April 2016, Washington DC. <https://nifa.usda.gov/event/april-13-2016-%E2%80%93-ifs-n-seminar>.

Invited webinar for the Washington State Antimicrobial Resistance Working Group, 8 April 2016.

Invited committee member for Fleming Fund advisory committee, Royal Veterinary College, University of London, April-October 2016.

Invited panel member for a Longitude Prize on antimicrobial resistance (31 March 2016, Seattle Children's Research Institute, Seattle, WA).

Invited speaker, XXVIII Brazilian Congress of Microbiology, Florianopolis – SC, Brazil, 18-22 Oct 2015. "Controlling antibiotic resistance in food animal production."

Invited lecture, Oregon State University, Eugene, Oregon, 6 October 2015. "Antimicrobial Resistance: Moving beyond the prudent use paradigm"

Invited as facilitator for a "Community Conversation" on antibiotic resistance, sponsored by the Northwest Association for Biomedical Research, Sep 28, 2015, Spokane, WA.

Invited lecture, Universidade Federal de Viçosa, Viçosa, MG, Brazil, 12-13 March 2015. "Thinking outside the antibiotic resistance box."

Invited speaker, Symposium on Research in Veterinary Medicine 2014, Universidade Federal de Viçosa, Viçosa, MG, Brazil, 12-15 November 2014. "The role of excreted antibiotics in the establishment of antibiotic resistance reservoirs."

Invited speaker, Innovet 2014, Universidade Federal de Viçosa, Viçosa, MG, Brazil, 9-11 November 2014. "Novel technologies revitalize old-fashioned chemical treatments."

Invited lecture (EH490A/590D), University of Washington, Department of Environmental & Occupational Health Sciences, 23 October 2014, "Why does antimicrobial resistance persist?"

Invited speaker, One Health Workshop, "Impacts of animal food chain in human health," Universidade Federal de Viçosa, Viçosa, MG, Brazil, 1-3 October 2014. Title: "Contribution

of socio-economic and ecological factors to the prevalence of antibiotic resistance in Tanzanian communities.”

Invited seminar, Biosecurity COIN series, Pacific Northwest National Laboratory, Richland, WA, 22 September 2014. Title: “Socio-economic and ecological contributors to the antimicrobial resistance challenge.”

Invited Keynote Address, Regional Conference on Zoonotic Diseases – 2014, Nairobi, Kenya, 27-30 May. Title: “Ecological factors driving antibiotic resistance.” – conference canceled 22 May due to security issues in Kenya. Proposed reschedule in March 2015.

Invited speaker, University of Washington Department of Environmental & Occupational Health Sciences, 3 April 2014. Title: “Antimicrobial resistance: moving beyond the prudent use paradigm.”

Presented seminar on antibiotic resistance for a local chapter of the League of Women Voters, 16 January 2014. Title: “Antibiotic resistance: Where’s the beef?” Pullman, WA.

Presented research findings on antibiotic resistance in *Salmonella* at the Avian Disease Division of the Animal and Plant Quarantine Agency (2 Dec 2013), and at the College of Veterinary Science, Konkuk University (4 Dec 2013), Seoul, South Korea, in December 2013. Title: “The potential role of antibiotic residues in perpetuation of antibiotic resistance in *Salmonella* and *E. coli*.”

Presented research findings on antibiotic resistance in Tanzania to the Global Antibiotic Resistance Partnership (GARP) team at the Center for Disease Dynamics, Economics & Policy, 13 Nov 2013, Washington, D.C.
http://cddep.org/blog/posts/dr_doug_call_new_research_antibiotic_resistance_serengeti_ecosystem.

Oral presentation at the “One Health and Tropical Medicine: Importance of the Human-Animal-Environment Interface,” symposium during the annual American Society of Tropical Medicine and Hygiene meeting, 16 Nov 2013, Washington, D.C. Title: “Ecological and socioeconomic factors that make antibiotic resistance a one health challenge.”

Organized and hosted workshop on “Antibiotic Resistance in the Greater Serengeti Ecosystem,” 8-9 October 2013, Arusha, Tanzania.

Invited to present research findings on antibiotic resistance and microcins by CEO of PerforMix Nutrition Systems, Nampa, ID, 3 June 2013. Meeting included representatives from several companies.

Pacific Northwest National Laboratory, Call, “Challenging conventions about how antibiotic resistance arises and persists,” 28 November 2011, Richland, WA.

Boyd Orr Centre for Population & Ecosystem Health. First annual Open House, “From Pathogens to Populations. Invited presentation, Call, “Factors contributing to the persistence of antibiotic resistance bacteria,” 5-6 May 2011, University of Glasgow, Scotland.

University of Idaho, Department of Molecular Biology and Biochemistry, invited seminar, 31 March 2011, Call, “Identifying the mechanisms responsible for maintenance of antibiotic resistant *Escherichia coli*.”

In 2010 I was recruited to the Innovator’s seminar series for WSU, but this was delayed to accommodate a change in priorities. I was also invited to present a seminar for Invitrogen Corporation, but had to cancel owing to conflicts with graduate student preliminary exams.

American Society for Microbiology, Annual meeting (San Diego, CA, 23-27 May 2010), Call, "The challenging intersection between infectious dose and detection of waterborne pathogens."

University of Texas, Southwestern Medical Center, Department of Microbiology, invited seminar February 2, 2010, Call, "Regulation of T3SS1 and effector protein function in *Vibrio parahaemolyticus*."

University of Minnesota, invited seminar, Department of Veterinary and Biomedical Sciences, December 4, 2009, Call, "Persistence of antibiotic resistant bacteria in the absence of drug selection."

University of Minnesota, invited seminar for Biotechnology seminar series, December 3, 2009, Call, "Detection and differentiation of bacterial pathogens using nucleic acid based assays."

Washington Innovation Summit 2009, invited to give a brief presentation on antibiotic resistance and participant in a panel discussion for the *Healthy Ecosystems* track session, Bellevue, WA, 9 April 2009.

Washington State University School for Molecular Biosciences, invited department seminar, February 2009, "Regulation of the *Vibrio parahaemolyticus* type III secretion systems and effector protein identification."

Cornell University, Ithaca, NY. Invited seminar, 2 Dec 2008. Call, "Persistence of antibiotic resistant bacteria in the absence of drug selection."

FDA-Rockville, MD. Invited seminar, 31 October 2007. Call, "Persistence of antibiotic resistance in agricultural environments."

U.S. EPA Workshop on Microbial Source Tracking, Cincinnati, OH, 9-11 July 2007. Call, Broschat, and Leach. "How can we interpret BST data from library independent markers?"

WADE invited address, Washington Association for District Employees – Leavenworth, June 19-20, 2007, "Tracking fecal pollution: will the water ever clear?"

EPA Region 10 meeting, "2007 Bacteria/Microbe Conference", May 14-15, 2007. Call, Broschat, and Leach. "Interpreting data from library dependent markers – will the water ever clear?"

WADE invited address, Washington Association for District Employees – Leavenworth, June 20-21, 2006, "The In's and Out's of Bacterial Source Tracking."

National Dairy Summit, Seattle, WA, 16-17 Nov 2005. "Antibiotics and antibiotic resistance in humans and animal agriculture."

MicroPad, A European FP5 Program, Molecular ecology workshop entitled, "Detection of microbial biodiversity in environmental samples," Camerino, Italy, 19-21 September 2005. "Assessing intra-specific genetic diversity for bacteria and genetic diversity between plasmids using DNA microarrays."

WA-DOE, Colville River TMDL Advisory Group, Colville, WA, 19 July 2005. "Microbial source tracking: an update on genetic markers," presentation. Invited extension activity.

U.S. Environmental Protection Agency, Cincinnati, OH, Feasibility of Using DNA/RNA Microarrays and Related Technologies for High Through-put Detection of Waterborne Pathogens, 22-23 March 2005. "A Primer on Microarrays and the Prospects and Challenges for Pathogen Detection"

Course the Marine Genomics Europe Network is organizing at AWI- Bremerhaven, Germany, 4-5 March 2005. "A general introduction on applications of microarrays for identification"

purposes in the marine environment,” invited presentation. Adverse travel conditions (weather) precluded my ability to present this talk. I was invited to return in September 2005 to give a talk on using microarrays for phylogenetics research.

Metropolitan Water District of Southern California, San Antonio, TX, 16-18 Feb 2005. Microbial Source Tracking Workshop. My lab was invited to consult with other researchers regarding priorities and challenges in MST research.

EPA Workshop, Baltimore, MD, Oct 28-29, 2004. Virulence Factor-Activity Relationships. Participated in panel discussions about VFAR concepts.

WA-DOE, Colville River TMDL Advisory Group, Colville, WA, 22 Sep 2004. “Microbial source tracking: an update on genetic markers,” presentation. Invited extension activity.

Fifth Annual General Meeting of the “Genome and Health Initiative, Montréal, Canada, 16-19 May 2004. “Application of DNA microarrays to pathogen detection and comparative genomics.” Invited seminar.

WA-DOE, Colville River TMDL Advisory Group, Colville, WA, 22 Jan 2004. “Microbial source tracking: an overview,” presentation. Invited extension activity.

AALVD, St. Louis, MO. D.R. “Application of DNA microarrays in diagnostic medicine and molecular epidemiology,” 19 Oct 2002. First plenary session.

Dept. Pathology, University of Michigan, Ann Arbor, MI. “Applying microarrays to diagnostics and epidemiology of infectious disease,” 5/08/01.

Poster and Oral Presentations (italics for presenting author)

2020

6th Decennial International Conference on Healthcare Associated Infections, Atlanta, Georgia, 26-30 March 2020.

- *Omulo S*, et al. Point-prevalence surveys of antibiotic use at three large public hospitals in Kenya. (poster)
- *Ramay B*, Caudell M, Cordon-Rosales C, Archila D, Palmer G, Jarquin C, Moreno P, McCracken J, Rozenkrantz L, Amram O, Omulo S, DR Call. Antibiotic use and hygiene interact to influence the distribution of antibiotic-resistant bacteria in Guatemala. (Distinguished Oral Presentation).

2019

Cluster of Excellence on Plant Sciences, Transatlantic Summer School, Maria in der Aue, Wermelskirchen, Germany. *Witherell K*, Price J, Bandaranayake A, Olson J, and DR Call. Naturally-sourced peptides can kill multidrug-resistant bacteria,” 27-31 May 2019.

CRWAD 2019, Chicago, IL. *Loch et al.* “Flavobacterial diversity and its effect on disease in aquaculture,” 3 Nov 2019.

American Society for Microbiology, MICROBE, San Francisco, CA, June 2019.

- *Witherell S*, Price J, Bandaranayake A, Olson J, and DR Call. Circumventing colistin resistance via antimicrobial peptides.

- *Aslam* B, Chaudhry T, Arshad M, Call DR. Molecular detection of ESBL-producing *Klebsiella pneumoniae* from hospital waste in Pakistan.
- *Avillan* J, Lu S, Cundiff J, Liu J, and DR Call. Emerging antimicrobial-resistance genes in the face of competition.

NIH Protein Biotechnology Program Symposium, Nanobiotechnology and Nanomedicine. Washington State University, Pullman, WA. *Avillan* J, Lu S, Cundiff J, Liu J, and DR Call. Emerging antimicrobial-resistance genes in the face of competition. April 2019.

WSU Academic Showcase, March 2019. *Witherell* S, Price J, Bandaranayake A, Olson J, and DR Call. Circumventing colistin resistance via antimicrobial peptides.

2018

American Society of Tropical Medicine and Hygiene 67th Annual Meeting, accepted for October 28 - November 1, 2018 in New Orleans, Louisiana. Ramay, Sanchez, Purificacion, Archila Diaz, Jarquin, Cordon-Rosales, McCracken, Palmer, Call. Poster. Community-based Assessment of Antibiotic Resistant *Escherichia coli* in Quetzaltenango, Guatemala.

Military Health System Research Symposium, August, 2018, Kissimmee, FL. Beyenal, Kiamco, Zmuda, Sultana, Mohamed, Call, Raval, Patel. Poster. Electrochemical bandage for wound healing.

43rd Annual Eastern Fish Health Workshop, Chattanooga, TN.

- *Knupp* C, Wiens GD, Faisal M, **Call** DR, Cain KD, Nicolas P, Van Vliet D, Yamashita C, Ferguson J, Meuninck D, Hsu H-M, Baker B, Shen L, and Loch TP. Elucidating the intraspecific diversity of *Flavobacterium psychrophilum* in the USA.
- *Loch* TP, *Knupp* C, **Call** DR, and Faisal M. Flavobacterial diversity associated with the early life stages of farmed us rainbow trout (*Oncorhynchus mykiss*) and its effect on disease control.

Great Lakes Fishery Commission – Great Lakes Fish Health Committee Meeting, Cleveland, OH. *Knupp* C, Faisal M, Call DR, Cain KD, Nicolas P, Wiens G, Loch TP. Flavobacterial diversity & epidemiology in hatchery systems.

Michigan Department of Natural Resources Fisheries Division Section Meeting. Petoskey, MI. *Knupp* C, Faisal M, Call DR, Cain KD, Nicolas P, Wiens G, Loch TP. Flavobacterial diversity & epidemiology in hatchery systems.

2017

6th East African Health and Scientific Conference, 29-31 March 2017, Bujumbura, Burundi. Poster, *Caudell*, **Call**, Subbiah, Keyyu, Matthews, Mair, Quinlan, and Quinlan. “Prevalence of Antimicrobial Resistance in Northern Tanzania and Socioeconomic Correlates.”

Washington State University Academic Showcase, March 2015. Posters.

- *Omulo*, Lockwood, Lofgren, Mwangi, Davis, Zambriski, Njenga, McElwain, Palmer and **Call**. Water, sanitation, and hygiene: key risk factors for community antimicrobial resistance burden.
- *Falghoush*, Beyenal, and **Call**. Sequential hypertonic-hypotonic treatment of *Acinetobacter baumannii* biofilm enhances penetration of hydrophilic antibiotics.

- *Zhang*, Besser, **Call**, Jones and Davis. Prevalence of beta-lactam resistance genes in bacteriophage fractions of environmental samples, Washington State.
- *Magunda*, Mobley, **Call**. Deploying elemental iodine in a vapor form to disinfect water and to clear biofilms.
- *Lu*, Zhao, Avillan, Liu and **Call**. Autoinducer-2 quorum sensing contributes to microcin-PDI regulation in *Escherichia coli*.
- *Chowdhury*, **Call**, Broschat. The extent to which antimicrobial resistance genes crossover in bacteria.

ASM General Meeting, New Orleans, 1-5 June 2017

- *Lu*, Zhao, Avillan, Liu, **Call**. Autoinducer-2 quorum sensing contributes to microcin-PDI regulation in *Escherichia coli*.
- *Magunda*, Kiamco, Strom, Beyenal and **Call**. Enhancing the fitness cost of antibiotic resistance.
- *Falghoush*, Beyenal, Besser, Omsland and **Call**. Osmotic compounds enhance antibiotic efficacy against *Acinetobacter baumannii* biofilm communities.
- *Omulo*, Lockwood, Lofgren, Palmer and **Call**. Sanitation: A key risk factor in community burden of antimicrobial resistance.
- *Zhang*, Besser, **Call**, Jones and Davis. Prevalence of beta-lactam resistance genes in bacteriophage fractions of environmental samples, Washington State.

33rd World Veterinary Conference, Songdo ConvensiA, Incheon, Korea, 27-31 August 2017.

Pettan-Brewer, Bandeira, Velho, **Call**, Galhardo, Ward, Lopez, Braud, Rabinowiz, Nero, "From the approach to concept – a successful "grass root" One-Health movement in Brazil and Latin America.

ASM Northwest Branch, Pullman, WA, 13-14 Oct 2017. *Lu*, Zhao, Avillan, Liu, **Call**.

Autoinducer-2 quorum sensing contributes to microcin-PDI regulation in *Escherichia coli*

18th Annual College of Veterinary Medicine Research Symposium, Pullman, WA, October 2017.

Lockwood, Palmer and **Call**. Diffusion of antimicrobial resistance.

2016

17th Annual College of Veterinary Medicine Research Symposium, October, 2016. Posters

- *Falghoush*, Omsland, Besser, Beyenal and **Call**. Hypertonic treatment is a promising strategy to overcome antibiotic tolerance of *Acinetobacter baumannii* biofilm communities.
- *Lu*, Orfe, Avillan, Zhao, Besser and **Call**. The effects of pH and quorum sensing in the production of antimicrobial peptide microcin PDI.
- *Omulo*, Lockwood, Mugoh, Owino, Owiti, and **Call**. Latrine samples: a goldmine for antimicrobial resistance surveillance in low-income countries.

Pacific RIM Meeting on Electrochemical and Solid-State Science, 2-7 October 2017, Honolulu, Hawaii. *Sultana*, **Call** and Beyenal. "An Electrochemical Scaffold for Wound-Related Biofilms Elimination." Poster.

Symposium on Advanced Wound Care (SAWC), October 7-9, Las Vegas, NV. *Sultana*, **Call** and Beyenal. "Maltodextrin enhances biofilm elimination by electrochemical scaffolds." Poster.

Military Health System Research Symposium (MHSRS), 15-18 August, 2016. *Sultana*, **Call** and Beyenal. "An Electrochemical Scaffold for Wound-Related Biofilms Elimination." Poster.

25th International ICFMH Conference, FoodMicro 2016, 19-22 July 2016. *Campos-Galvão, Call and Nero*. “A high proportion of antibiotic-resistant *Salmonella enterica* from Minas Gerais, Brazil, harbor apparently dysfunctional antibiotic-resistance genes.”

ASM Microbe 2016, Boston, MA, 16-20 June 2016. *Sultana, Call and Beyenal*. “Maltodextran enhances the effectiveness of electrochemical scaffold generated H₂O₂ against biofilms.”

International Symposium on Fish Nutrition and Feeding, Sun Valley, Idaho, 5-10 June 2016. *Cain, Schubiger, Burbank, Ghosh, and Call*. “Characterization of a putative probiotic *Enterobacter* strain (C6-6) and potential mechanisms associated with protection of rainbow trout challenged with *Flavobacterium psychrophilum*, the causative agent of coldwater disease/rainbow trout fry syndrome.”

Consortium of Universities for Global Health 7th annual conference. The Lancet Global Health 2016:4 Supplement 1, S20. Mosites, E, T Mwangi, E Otiang, G Garland-Lewis, M Sammons, C Onyango, A Eng, C Noecker, O Manor, S Hilton, D **Call**, N Kariuki, J Zambriski, J Wasserheit, J Walson, G Palmer, J Montgomery, E Berenstein, R Omoro, and P Rabinowitz. 2016. Characterizing the taxonomic composition of children and livestock gut microbiomes and of environmental samples and the potential role for household-level microbiome sharing in western Kenya.

Washington State University Academic Showcase, March 2015. Posters.

- *Subbiah, Caudell, Avillan, Orfe, Mshanga, Quinlan, Quinlan, Mair, Matthews, and Call*. “Drinking raw milk: A potential hazard for spreading antibiotic resistant *E. coli* in northern Tanzania.”
- *Lu, Zhao, Orfe, Besser and Call*. “Osmostress and pH sensitivity in production of antimicrobial peptide microcin PDI in *Escherichia coli*.”

2015

Washington State University Academic Showcase, March 2015. Posters.

- *Omulo, Thumbi, Njenga, Call*. “40 years of antimicrobial resistance studies in eastern Africa: What can be done better?”
- *Mitchell, Subbiah, Ullman, Frear, Call*. “Evaluation of 27 different biochars for potential sequestration of antibiotic residues in food animal production environments.”
- *Subbiah, Caudell, Strom, Quinlan, Quinlan, Matthews, and Call*. “Maasai households in northern Tanzania harbor a higher prevalence of antibiotic resistant *E. coli* compared with Chagga households.”
- *Mshanga, Subbiah, Call*. “Common veterinary antibiotics use practices in Tanzania do not selectively amplify antibiotic resistant *E. coli* in cattle.”

Washington State University, Wiley Research Symposium, 2015. Posters.

- *Mobley, Orfe, Strom, Omulo, Radicone, Call*. “A novel technology revitalizes old-fashioned chemical sanitation.”
- *Sammons, Mosites, Rabinowitz, Omoro, Walson, Zambriski and Call*. “One House-One Health Approach to Childhood Growth and Development: Identifying and Resetting High-Risk Household Gut Microbiomes.”
- *Omulo, Thumbi, Njenga, Call*. “40 years of antimicrobial resistance research in Eastern Africa: what can be done better?” First prize winner for international research category.

Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry, Portland, OR, 29 April – 2 May, 2015. *Mitchell*, Subbiah, Ullman, Frear, **Call**. “Pinewood biochar adsorbs hydrophilic antibiotic compounds.”

29th Annual National Conference on Undergraduate Research, Eastern Washington University, Cheney, WA, 16-18 April 2015. *Mobley*, Orfe, Strom, Omulo, Radicone, **Call**. “A novel technology revitalizes old-fashioned chemical sanitation.”

4th ASM Conference on Antimicrobial Resistance in Zoonotic Bacteria and Foodborne Pathogens, May 8-11, 2015.

- *Liu*, Zhao, Orfe, Subbiah, **Call**. “Soil-borne reservoirs of antibiotic resistant bacteria are established following therapeutic treatment of dairy calves.” Jinxin Liu received an ASM travel grant to support his participation and his poster was awarded the “best poster” award during the conference.
- Subbiah, Caudell, R. Quinlan, M. Quinlan, Mshanga, Matthews, Keyyu **Call**. “Maasai households in northern Tanzania harbor a higher prevalence of antibiotic resistant *E. coli* compared with Chagga households.” This paper was selected for oral presentation.

2nd AFRICE Conference, Antimicrobial use and resistance in Eastern Africa, Nairobi, Kenya, 18-19 June 2015.

- *Subbiah*, Caudell, R. Quinlan, M. Quinlan, Mshanga, Matthews, Keyyu **Call**. “Maasai households in northern Tanzania harbor a higher prevalence of antibiotic resistant *E. coli* compared with Chagga households.” This paper was selected for oral presentation.
- *Omulo*, Thumbi, Njenga, **Call**. “40 years of antimicrobial resistance research in Eastern Africa: what can be done better?” This paper was selected for oral presentation.

International Society for Veterinary Epidemiology and Economics, Merida, Yucatan, Mexico, 3-7 Nov 2015. *Crudo*, Sischo, **Call**. “Mathematical Modeling of Infectious Disease: The Interaction of Science and Social Science in Disease Response” *Accepted abstract*.

16th Annual College of Veterinary Medicine Research Symposium, October, 2015. Posters

- *Brown*, K., R. Mugoh, Omulo, S. DR **Call**, Trends in Antibiotic residues and antibiotic-resistant bacteria in milk marketed for human consumption.
- *Liu*, Zhao, Orfe, Subbiah, **Call**. Soil-borne reservoirs of antibiotic resistant bacteria are established following therapeutic treatment of dairy calves.
- *Lu*, Zhao, Orfe, **Call**. Osmoregulation is key to *E. coli* microcin MccPDI production and inhibition.

2014

Washington State University Academic Showcase, March 2014. Posters.

- *Youngquist*, Liu, Orfe, Jones, and **Call**. “Composting neutralizes ciprofloxacin in biosolids.”
- *Nydam*, Shah, and **Call**. “Transcriptome analysis of *Vibrio parahaemolyticus* in type III secretion system 1 inducing conditions.”
- *Schubiger*, Cain, Shah, McElwain, Snekvik and **Call**. Effects of *Enterobacter* sp. on the agent of coldwater disease, *Flavobacterium psychrophilum*, in rainbow trout.
- *Lu*, Zho, Eberhart, Besser, and **Call**. “A genome-wide functional assay confirms that OmpF is the critical outer membrane protein that is required for susceptibility to *E. coli* microcin MccPDI.”

- Liu, Lu, Zhao, Subbiah, Mobley, Orfe, Nydam, Ullman, Matthews, and **Call**. “Excreted ceftiofur and florfenicol from cattle amplify resistant *E. coli* populations in soils.”

Washington State University SURCA, March 2014. Posters.

- *de la Cruz*, Cilingir, Broschat, **Call**, Davis, and Orfe. “A rapid algorithm for detecting antibiotic resistance gene sequences from next-gen sequencing data.”
- *Volz*, Orfe and **Call**. “The impact of non-random SNPs on functionality of *floR* encoded florfenicol resistance.”
- *Mobley*, Orfe, and **Call**. “Bacteria conjugation efficiency in the presence of sub-minimal inhibitory concentrations of florfenicol or ceftiofur antibiotics in a soil-water environment.”

Washington State University, Wiley Research Symposium, 2014. Posters.

- *Lu*, Zhao, Eberhart, Besser and **Call**. “A genome-wide functional assay confirms that OmpF is the critical outer membrane protein that is required for susceptibility to *E. coli* microcin MccPDI.”
- *Schubiger*, Cain, Shah, McElwain, Snekvik and **Call**. Effects of *Enterobacter* sp. on the agent of coldwater disease, *Flavobacterium psychrophilum*, in rainbow trout.”
- *Nydam*, Shah, and **Call**. “Transcriptome analysis of *Vibrio parahaemolyticus* in type III secretion system 1 inducing conditions.”

Keystone Symposia on Molecular and Cellular Biology, “Exploiting and Understanding chemical biotransformation in the human microbiome (D1),” Big Sky Resort, Big Sky, MT, 1-6 April 2014. *Rabinowitz*, Mosites, Omere, Montgomery, Wasserheit, Palmer, **Call**, Van Voorhis, Zambriski, and Walson. “Human-animal microbiome related to enteric dysfunction and growth failure?” Poster.

Wound Healing Society, Symposium on Advanced Wound Care, Orlando, FL, 23-27 April 2014.

- **Call**, Lone, Atci, Beyenal, Abu-Lail, and Fransson. “MRSA biofilms deplete oxygen within skin explants.” Selected for oral presentation.
- *Beyenal*, Kiamco, Khan, Fransson, **Call**, Abu-Lail, Renslow. “How hyperosmotic agents can inhibit biofilms on wounds.” Poster.

ASM General Meeting, Boston, MA, 18-21 May 2014. Posters

- *Lone*, Orfe, Beyenal, Atci, Jin, Gang, Fransson, Noh, Abu-Lail, and **Call**. “Porcine explant model yields multiple soluble compounds of physiological importance from MRSA biofilms.”
- Eberhart, *Zhao*, Lu, Orfe, Besser, and **Call**. “OmpF is necessary for microcin MccPDI activity against susceptible *E. coli*.”
- Liu, Lu, Zhao, Subbiah, Mobley, Orfe, Nydam, Ullman, Matthews, and **Call**. “Excreted ceftiofur and florfenicol from cattle amplify resistant *E. coli* populations in soils.”
- *Subbiah*, Orfe, Strom, de la Cruz, Cilingir, Broschat, Olatoye, and **Call**. “Application of high-resolution melt analysis to track the molecular epidemiology of tetracycline resistance from *E. coli* and *Salmonella*.”

Meta Center for Systems Biology, Symposium, “Modeling our Microbial Selves,” University of Oregon, Eugene, OR, 8-10 August 2014. *Falghoush*, Lone, Orfe, Atci, Beyenal, **Call**. *Acinetobacter baumannii* biofilms are vulnerable to treatment by a combination of an antibiotic and hyperosmotic agent.” Poster.

15th Annual College of Veterinary Medicine Research Symposium, October 2014. Posters

- Falghoush, Lone, Atci, Beyenal, and **Call**. “Acinetobacter baumannii biofilms are vulnerable to treatment by a combination of an antibiotic and hyperosmotic agent.”
- Liu, Lu, Zhao, Subbiah, Mobley, Orfe, Nydam, Ullman, Matthews, and **Call**. “Excreted ceftiofur and florfenicol from cattle amplify resistant *E. coli* populations in soils.”
- Lu, Zhao, Liu, Besser and **Call**. “Effect of osmoregulation and iron on production of microcin MccPDI.”
- Mobley, Orfe, Strom, Omulo, Radicone, and **Call**. “A novel technology revitalizes old-fashioned chemical sanitation.”
- Mshanga, **Call** Subbiah, and Orfe. “Identifying best veterinary practices to minimize selection for antibiotic resistant *E. coli* in Tanzania.”
- Omulo, Zambriski, Davis, and **Call**. “Food as a possible fomite for transmission of antibiotic resistant bacteria in an urban environment.”
- Sammons, Mosites, Rabinowitz, Omore, Walson, Zambriski, and **Call**. “One house – one health approach to childhood growth and development: Identifying and resetting high-risk household gut microbiomes.”

Zoobiquity conference, Seattle, WA, 1 Nov 2014. *Sammons*, Mosites, Rabinowitz, Omore, Walson, Zambriski, and **Call**. “One house – one health approach to childhood growth and development: Identifying and resetting high-risk household gut microbiomes. Awarded first place for poster presentation.

2013

Research in Progress seminar series, Immunology and Infectious Disease program, Washington State University, 19 Nov 2013, “Teasing apart the contribution of ecological and socio-economic drivers of antibiotic resistance”

Evolution and Ecology of Infectious Disease meeting, National Science Foundation, University of Georgia, Athens, Georgia. *Call et al.* “Ecological and socio-economic factors impacting maintenance and dissemination of antibiotic resistance in the Greater Serengeti Ecosystem,” 15-18 March 2013.

Organizer and principle facilitator, “Antimicrobial Resistance in the Greater Serengeti Ecosystem,” Arusha, TZ, 8-9 October 2013. Stakeholder’s workshop, NSF-EEID project, 22 participants.

15th Annual College of Veterinary Medicine Research Symposium, October 29th, 2013. Posters

- *Addwebi*, **Call** and Shah. “Contribution of *Salmonella* Enteritidis virulence factors to intestinal colonization and systemic dissemination in day-old chickens.”
- *Brandvold*, Hines, Graca, Orfe, Mealey and **Call**. “Reduced efficacy of the theilericide drugs buparvaquone and parvaquone under abusive storage conditions.”
- *Falghoush*, Beyenal, and **Call**. “Effectiveness of Manuka honey on MRSA and *A. baumannii* biofilms.”
- *Liu*, Lu, Mobley, Zhao, Nydam, Orfe, and **Call**. “Excreted ceftiofur and florfenicol in soil amplify antibiotic resistant bacterial populations.”
- *Lu*, Liu, **Call**. “Identifying the receptors for MccPDI microcin uptake by susceptible *E. coli*.”
- *Nelson*, Orfe, Subbiah, and **Call**. “Trimethoprim resistance gene, *drfA1*, may be retained during long-term passage by integrating into the bacterial host chromosome.” Ms. Nelson was awarded a second place prize for best presentation.

- *Poindexter*, Kugadas, **Call**, Srikumaran. "Inhibition of growth of *Mannheimia haemolytica* by other bacteria."
- *Sammons*, Orfe, and **Call**. "Adaption of monodisperse droplet PCR and deep sequencing to construct an unbiased 16S library for microbial community surveys."
- *Schubiger*, Orfe, Cain, Shah, Snekvik and **Call**. "Inhibitory activity of *Enterobacter* sp. against *Flavobacterium psychrophilum*."

SURCA, March 2013, Tokuno, Orfe, Davis, and Call. "Imported food can serve as a fomite for antibiotic resistance genes, WSU, Pullman, WA."

2012

Washington State University School for Molecular Biosciences, Call, "Challenging conventions about how antibiotic resistance arises and persists," 16 Feb 2012.

Washington State University Academic Showcase, March 2012.

- *Nydam*, Orfe, Call. "*Vibrio parahaemolyticus* toxin TDH-A contributes to *in vitro* cytotoxicity, but not *in vivo* mortality."
- *Erwin*, Nydam, Call. "*Vibrio parahaemolyticus* Vp1702 (presumptive ExsE) is required for adhesion and subsequent T3SS1-dependent autophagy in HeLa cells."
- *Tokuno*, Orfe, Davis, Call. "Can imported foods serve as vehicles for transporting antibiotic resistance genes?"
- *Gliniewicz*, LaPatra, Cain, Snekvik and Call. "Involvement of *rpoB* mutations in attenuation of rifampicin resistant strains of *Flavobacterium psychrophilum*."
- *Eberhart*, Sawant, Brayton, Besser, Shah and Call. "Proximity-dependent inhibition in *Escherichia coli* is mediated through the activity of a novel microcin."
- *Gunderson* (Stevens), Orfe, Nsofor, Davis, and Call. "Searching for novel antimicrobial resistance genes in *Escherichia coli*."
- *Orfe*, Desai, Shah, Call, Guard, and Shah. "Differential transcriptional regulation between egg-contaminating and non-egg-contaminating strains of *Salmonella* Enteritidis."

American Society for Microbiology General Meeting, San Francisco, May 2012

- *Eberhart*, Deringer, Sawant, Brayton, Besser and Call. "Characterization of a novel microcin that kills enterohemorrhagic *Escherichia coli*."
- Orfe, Desai, *Shah*, Call, Guard, and Shah. "Differential transcriptional regulation between egg-contaminating and non-egg-contaminating strains of *Salmonella* Enteritidis."
- *Bavanthasivam*, Kugadas, Shanthalingam, Subramaniam, Dassanayake, Brown, Call, Knowles and Srikumaran. "Inhibition of growth of *Mannheimia haemolytica* by *Bibersteinia trehalosi* in the nasopharynx of domestic sheep (*Ovis aries*)."

2012 American Fisheries Society Idaho Chapter Annual Meeting, Coeur d'Alene, Idaho.
Gliniewicz, Plant, LaPatra, Cain, Snekvik, LaFrentz and Call. "Comparative proteomic analysis of virulent and rifampicin attenuated strains of *Flavobacterium psychrophilum*."

Flavobacterium 2012. Abo Akademi University, Turku, Finland, 5-7 June 2012. Metselaar, *Thompson*, Paley, LaPatra, Verner-Jeffreys, Lloyd, Call and Adams. "The role of *Flavobacterium psychrophilum* in Red Mark Syndrome."

Interscience Conference on Antimicrobial Agents and Chemotherapy. San Francisco, CA, 9-12 Sep 2012. Suthar, Roy, Call, Besser, and Davis. "Modeling the spread of antibiotic resistant pathogens in a veterinary hospital."

14th Annual College of Veterinary Medicine Research Symposium, October 24, 2012. Posters

- Nydam, Call. "Transcriptome analysis of type III secretion system 1 in *Vibrio parahaemolyticus*."
- Naik, Purcell, Alton, and Call. "Effects of omega fatty acid ratios on indicators of inflammatory activity in juvenile Chinook salmon."
- Schubiger, Orfe, Cain, Shah, Snekvik, and Call. "Inhibitory activity of *Enterobacter* sp. against *Flavobacterium psychrophilum*."
- Suthar, Roy, Call, Besser, Davis. "Modeling the spread of antibiotic resistant pathogens in a veterinary hospital."

2011

13th Annual College of Veterinary Medicine Research Symposium, October 27, 2011. Posters

- Bliggenstorfer, Orfe, and Call. "Efflux pump accumulation is the probable mechanism responsible for high-level florfenicol resistance in *Salmonella enterica*."
- Eberhart, Sawant, Brayton, Besser, Shah, and Call. "Proximity-dependent inhibition in *Escherichia coli* is mediated through the activity of a novel microcin." Eberhart was awarded third place for the advanced graduate student poster contest division.
- Erwin, Nydam, and Call. "*Vibrio parahaemolyticus* ExsE is required for translocation of the T3SS1 effector protein VopQ."
- Gliniewicz, Plant, LaPatra, Cain, Snekvik, LaFrentz, and Call. "Comparative proteomic analysis of virulent and rifampicin attenuated strains of *Flavobacterium psychrophilum*."
- Lee, Kugadas, Call, and Srikumaran. "Inhibition of growth of *Mannheimia haemolytica* by *Bibersteinia trehalosi* isolates from bighorn sheep."
- Strom, Orfe, Subbiah, and Call. "Is the elimination of a third-generation cephalosporin in cattle feces due to biological degradation?"
- Tokuno, Orfe, Davis, and Call. "Imported food can serve as a fomite for antibiotic resistance genes."
- Tomassini, Robertson, Besser, Call, and Sischo. "Intestinal microbiota in dairy calves."

American Fisheries Society Annual Meeting, Seattle, WA, 4-8 September 2011. Gliniewicz, Plant, LaPatra, Cain, Snekvik, LaFrentz, and Call. "Comparative proteomic analysis of virulent and rifampicin attenuated strains of *Flavobacterium psychrophilum*," Poster.

ASM Annual Meeting, New Orleans, LA, May 2011. Eberhart, Casavant, Orfe, Sawant, Brayton, Besser, Shah, and Call. "Defining the mechanism of proximity-dependent inhibition in *Escherichia coli*"

European Association of Fish Pathologists, Split, Croatia, June 2011. Metselaar, Thompson, Paley, Verner-Jeffreys, Feist, Peeler, Stone, LaPatra, Call and Adams. "Further evidence on the cause of red mark syndrome in rainbow trout (*Oncorhynchus mykiss*)."

16th International Symposium on Health-Related Water Microbiology, Rotorua, New Zealand, September 2011. Straub, Bartholomew, Valdez, Valentine, Dohnalkova, Ozanich, Bruckner-Lea, and Call. "Reproducibility of human norovirus infectivity assays."

International Pasteurella Conference, Elsinore, Denmark, August 2011. Bavananthasivam, Dassanayake, Shanthalangam, Kugadas, Call, Knowles, Srikumaran. "*Pasteurella multocida* inhibits the growth of *Mannheimia haemolytica*."

Washington State University Showcase, Pullman, WA, March 2011. Bliggenstorfer, Orfe, Friel, and Call. "An antibiotic resistant strain of *Salmonella* tolerate high concentrations of the antibiotic florfenicol."

2010

Washington State University Department of Chemical Engineering, guest seminar, March 2010. Call, "Detection and differentiation of bacterial pathogens using nucleic acid-based assays," invited seminar.

2010 International Symposium for Waterborne Pathogens, Manhattan Beach, CA, 2-4 May 2010. Straub, Bartholomew, Valentine, Dohnalkova, Bruckner-Lea, and Call, "Human Norovirus infectivity in tissue culture."

Western Regional Aquaculture Center, panel review, Spokane, WA, May and October 2010. Cain and Call, "Coldwater disease prevention and control through vaccine development and diagnostic improvements."

2nd ASM Conference on Antimicrobial Resistance in Zoonotic bacteria and foodborne pathogens in animals, humans and the environment. 8-11 June 2010. Davis, Baker, Orfe, New, Shah, Besser, and Call, "Antimicrobial resistance genotype-phenotype discrepancies among commensal *Escherichia coli* from cattle."

2010 Chemical and Biological Defense Science and Technology Conference, Orlando, FL, 15-19 November 2010. Bartholomew, Straub, Valentine, Zhang, Dohnalkova, Ozanich, Bruckner-Lea, and Call, "Use of a 3-D cell culture model to investigate pathogenicity of biological agents of concern to assess, "How clean is clean?"

Washington State University Showcase, March 2010, posters.

- Addwebi, Zhou, Call, and Shah, "Differential virulence of poultry associate *Salmonella* Enteritidis isolates."
- Bailey, Orfe, Davis, Shah and Call, "Association between intake of antacids and variance in acid tolerance for clinical isolates of *Salmonella enterica*."
- Bliggenstorfer, Orfe, Friel, Nelson, and Call, "Spontaneous antibiotic resistant breakouts of *Salmonella enterica* tolerate high concentrations of the antibiotic florfenicol."
- Casavant, Call, Sawant, "Persistence of streptomycin-sulfadiazine-tetracycline resistant *Escherichia coli* in dairy calves."
- Gliniewicz, Snekvik, Cain, LaPatra and Call, "Assessing the immune-protective potential of FP1493 against coldwater disease in rainbow trout."
- Lanier, Shah, Kumar, LaPatra, Gliniewicz, Snekvik, Cain, and Call, "Production of recombinant *in vivo* induced proteins of *Flavobacterium psychrophilum* for development of a coldwater disease vaccine in rainbow trout."
- Mitchell, Ullman, and Call, "Antibiotic dissipation in soil and water"
- Nelson, Orfe, Subbiah, and Call, "Antibiotic resistance genes are differentially regulated on a naturally occurring, multidrug resistance plasmid."
- Piñeyro, Zhou, Orfe, Friel, Lahmers, and Call, "T3SS2 of *Vibrio parahaemolyticus* contributes to acute secretory diarrhea in a new-borne piglet model."
- Orfe, Sota, Rogers, Bliggenstorfer, Top and Call. "Transposon-mediated resistance to third-generation cephalosporins."

- Sawant, Casavant, Call, and Besser, "Identification and characterization of proximity-dependent inhibition in *Escherichia coli* isolated from cattle."
- Subbiah, Friel, Top and Call, "Conjugation, segregation control, and fitness of *bla*_{CMY-2} plasmids in *Escherichia coli*."

NIH Integrated Research Network annual meeting, June 2010. Zhou, Y., Call, and Broschat, "Determining the genetic similarity of 286 Gram-negative enteric plasmids."

2010 Annual AAVLD/USAHA meeting, Minneapolis, MN, 11-17 November 2010. Righter, Rurangirwa, Call, and McElwain, "Development of a multiplex PCR coupled-liquid bead array for the simultaneous detection of multiple *Mycoplasma* species, including the causative agents of contagious bovine and caprine pleuropneumonia."

6th Annual ISAAC meeting, Tampa, FL, 6-9 September 2010. Metselaar, Thompson, Gratacap, Kik, LaPatra, Lloyd, Call, Smith, and Adams, "Possible common etiological agent for Strawberry disease and Red Mark Syndrome in rainbow trout."

WSU-UI Aquaculture Initiative, March 2010. Cain, Shah, and Call, "Comparative genomics and proteomics of *Flavobacterium psychrophilum*: Moving toward vaccine development."

American Society for Microbiology, San Diego, CA, 23-27 May 2010. Posters.

- Erwin, Zhou, and Call, "Identification of genetic regulatory components for *Vibrio parahaemolyticus* type III secretion system 1."
- Gliniewicz, Snekvik, Cain, LaPatra, and Call, "Assessing the immune-protective potential of FP1493 against coldwater disease in rainbow trout."
- Lloyd, LaPatra, Snekvik, Cain and Call, "Quantitative PCR demonstrates a positive correlation between a *Rickettsia*-like organism and severity of strawberry disease lesions in rainbow trout (*Oncorhynchus mykiss*)."
- Nydam, Zhou, Christensen, Konkel, Broschat, and Call, "Identifying signal motifs for transport through the type III secretion systems of *Vibrio parahaemolyticus*."
- Piñeyro, Zhou, Orfe, Friel, Lahmers, and Call, "T3SS2 of *Vibrio parahaemolyticus* contributes to acute secretory diarrhea in a new-borne piglet model."
- Shah, Zhou, Addwebi, Davis, Call, Guard, and Besser, "Cell invasion by *Salmonella enterica* serovar Enteritidis is correlated with motility and secretion of a type III effector protein."
- Sawant, Casavant, Call, and Besser, "Identification and characterization of proximity-dependent inhibition in *Escherichia coli* isolated from cattle."
- Subbiah, Friel, Top, and Call, "Conjugation, segregation control, and fitness for *bla*_{CMY-2} plasmids in *Escherichia coli*."

Northwest Branch of ASM, Seattle, WA, 15-16 October 2010. Erwin and Call, "Identification of genetic regulatory components for *Vibrio parahaemolyticus* type III secretion system 1," poster.

12th Annual College of Veterinary Medicine Research Symposium, October 27, 2010. Posters

- Bliggenstorfer, Orfe, Friel, and Call. "Antibiotic resistant breakouts of *Salmonella enterica* tolerate high concentrations of the antibiotic florfenicol."
- Eberhart, Casavant, Ellis, Sawant, Besser, Shah and Call. "Defining the mechanism of proximity-dependent inhibition in *Escherichia coli*."
- Erwin and Call. "Identification of the host-cell contact-dependent induction mechanism of *Vibrio parahaemolyticus* type III secretion system I."
- Gliniewicz, Cain, Snekvik, and Call. "The role of *rpoB* gene in rifampicin attenuation of *Flavobacterium psychrophilum*."

- Nydam, Zhou, and Call, "Identifying signal motifs for transport through the type III secretion systems of *Vibrio parahaemolyticus*."
- Shah, Zhou, Addwebi, Cassavant, and Call. "Transposon mutagenesis in a highly invasive isolate of *Salmonella* Enteritidis reveals a number of genes with potential roles in cell invasion."
- Subbiah, Mitchell, Ullman, and Call. "Not all antibiotics retain their biological activity in soil."

2009

U.S. Japan Cholera meeting, San Diego, CA, Oct 12-14, 2009. Zhou, Shah, Konkel, and Call, "ExsC directly binds ExsD to allow expression of type III secretion system 1 genes in *Vibrio parahaemolyticus*," poster.

10th Annual College of Veterinary Medicine Research Symposium, October 14, 2009. Posters

- Bailey, Davis, Shah, Orfe, and Call, "Association between intake of antacids and variance in acid tolerance for clinical isolates of *Salmonella enterica*"
- Eberhart, Casavant, Besser, Call, and Sawant, "Novel mechanism of contact-dependent inhibition in bovine *Escherichia coli*"
- Erwin, Zhou, and Call, "Identification of genetic regulatory components for *Vibrio parahaemolyticus* type III secretion system I"
- Fischer, Shah, Larson, Konkel, Orfe, Zhou, and Call, "Expression and purification of recombinant chicken CXCLi1 and CXCLi2 chemokines"
- Garner, Subbiah, Friel, Ullman, and Call, "Variable retention of antibiotic activity after exposure to high organic soil"
- Gliniewicz, Cain, Snekvik, and Call, "The role of *rpoB* in the attenuation of *Flavobacterium psychrophilum* after passage with rifampicin"
- Lanier, Orfe, Zhou, Shah, and Call, "Identifying components of Dulbecco's Modified Eagle Medium that induce expression of the type III secretion system I in *Vibrio parahaemolyticus*"
- Nydam, Zhou, Christensen, Konkel, Broschat, and Call, "Identifying conserved signal sequences in the type III secretion system of *Vibrio parahaemolyticus*"
- Orfe, Sota, Rogers, Bliggenstorfer, Top and Call, "Transposon-mediated resistance to third-generation cephalosporins"
- Piñeyro, Zhou, Orfe, Friel, and Call, "Newborn piglet model for *Vibrio parahaemolyticus*"
- Shah, Zhou, Addwebi, Call, Besser, and Guard-Bouldin, "Identification of low-invasive strains of *Salmonella enteritidis* isolated from poultry and human clinical sources"
- Shah, Kotla, Orfe, Friel, Konkel, and Call, "Identification of genes that contribute to the survival of *Campylobacter jejuni* in refrigerated and frozen foods"
- Subbiah, Friel, and Call, "Fitness costs associated with carriage of *bla*_{CMY-2} multidrug resistance plasmids in *Escherichia coli* and *Salmonella enterica*"

Western Regional Aquaculture Commission, Cain and Call, "Coldwater disease prevention and control through vaccine development and diagnostic improvements," 7 October 2009.

VMP Research in Progress Seminar, Call, "Regulation and function of type III secretion systems in *Vibrio parahaemolyticus*," 15 September 2009.

Washington State University, Inspiring a New Generation of Scholars and Scientists, seminar series, Call, "What is antibiotic resistance and where does it come from?" 18 Feb 2009.

Washington State University School for Molecular Biosciences, Call, "Regulation of *Vibrio parahaemolyticus* type III secretion systems and effector protein identification, 12 Feb 2009.

Lloyd SJ, LaPatra SE, Snekvik KR, Lindstrom N, Cain KD, Call DR (2009) Identification of a Rickettsia-like bacterium associated with strawberry disease lesions in rainbow trout. Idaho Aquaculture Association General Meeting, Twin Falls, ID. Oral Presentation.

Lloyd SJ, LaPatra SE, Snekvik KR, Lindstrom N, St-Hilaire S, Cain KD, Call DR (2008) A rickettsia-like organism is associated with strawberry disease lesions in rainbow trout. Department of Veterinary Microbiology and Pathology Research in Progress Seminar, College of Veterinary Medicine, Washington State University, Pullman WA. Oral Presentation.

Long, A., Call, D.R., and Cain, K.D. 2009. Comparison of diagnostic techniques for detection of *Flavobacterium psychrophilum* in ovarian fluid. *Talk presented at the 50th Western Fish Disease Workshop and AFS Fish Health Section Annual Meeting*. Park City, Utah. June 7-10.

American Society for Microbiology, General Meeting, Philadelphia, PA, 18-22 May 2009.

- Straub, Bartholomew, Call, Valdez, Valentine, Dohnalkova, Bruckner-Lea. Human Norovirus Infection using a 3-D Organoid Model of Large Intestinal Epithelium, poster.
- Wiens, LaPatra, Call, Welch. Comparative genomics of the *Flavobacterium psychrophilum* *frp* locus, poster.

8th Intl Plant Growth-Promoting Rhizobacteria Workshop, Portland, OR, May 17-22, 2009. Okubara, Walter, Bonsall, Call, Skinner. "Cultivar-dependent rhizosphere colonization, antifungal metabolite accumulation and gene expression in the wheat-*Pseudomonas* interaction."

NIH-NIAID Integrated Research Network, Stevenson, WA, March 30--April 1, 2009.

- S. Shringi, D. Call, and TE Besser, "Differential virulence of enterohemorrhagic *E. coli* O157:H7 shiga toxin-encoding bacteriophage insertion site genotypes."
- T.M. Straub, R.A. Bartholomew, C.O. Valdez, N.B. Valentine, C.J. Bruckner-Lea, and D.R. Call, "Replication of human noroviruses in a 3-D large Intestinal cell model."
- X. Zhou, M.E. Konkel, and D.R. Call, "Vp1659 is secreted by type III secretion system 1 in *Vibrio parahaemolyticus* and is required for the cytotoxicity against HeLa cells."
- D.R. Call, R.S. Singer, D. Meng, S.L. Broschat, L.H. Orfe, J.M. Anderson, D.R. Herndon, L.S. Kappmeyer, J.B. Daniels, and T.E. Besser, "*Bla*_{CMY-2} positive Inc A/C plasmids from *Escherichia coli* and *Salmonella enterica* are a distinct component of a larger lineage of plasmids."

WSU Showcase, Pullman, WA, 27 March 2009.

- Meng, Broschat, Davis, Ahmed, Besser, Call. "A fusion algorithm for determining genetic relationships."
- Lloyd, S, S LaPatra, K Snekvik, N Lindstrom, K Cain, and DR Call. Possible isolation in tick cell culture of a Rickettsia-like organism associated with Strawberry Disease lesions in rainbow trout.

ACVP Annual Meeting, December 5-9, 2009, Monterey, California. Ramsay, Leib, Orfe, Call and Mealey, "Detection of Equine classical MHC class I alleles using pcr and microarrays."

European Workshop on PhD and Post-doctoral Fellows on Anadromous Salmonids (NoWPaS), March 19–22, 2009, Southampton, England. Metselaar, Thompson, Kik, LaPatra, Lloyd, Call, Adams, "Studies on red mark syndrome."

Department of Homeland Security Science and Technology Directorate Chemical and Biological R&D Technologies Conference, Houston, TX, January 2009. Straub, Bartholomew, Valdez, Bruckner-Lea, Dohanlkova, Call, "Human Norovirus Infection of *In Vitro* 3-D Small and Large Intestinal Epithelial Cell Models."

VMP Research in Progress Seminar, Call, "Persistence of antibiotic resistant bacteria in the absence of drug selection," 20 Jan 09.

Gordon Research Conference, Houston, TX on January 19, 2009. Straub, Bartholomew, Valdez, Bruckner-Lea, Dohanlkova, Call, "Human Norovirus Infection of *In Vitro* 3-D Small and Large Intestinal Epithelial Cell Models," oral presentation

2008

9th Annual College of Veterinary Medicine Research Symposium, October 18, 2008. Posters

- Aschenbroich, S, N Lindstrom, P Friel, and DR Call. Isolation of wild-type *Salmonella* and *Escherichia coli* bacteriophage from dairy farms.
- Lloyd, S, S LaPatra, K Snekvik, N Lindstrom, K Cain, and DR Call. Possible isolation in tick cell culture of a Rickettsia-like organism associated with Strawberry Disease lesions in rainbow trout.
- Fischer, A, L Orfe, X Zhou, DR Call, C Larson, ME Konkel, and D Shah. Expression of chicken IL-8 orthologue, CXCLi2.
- Abdulkirim A, C Casavant, DR Call, and A Sawant. Dietary milk supplement does not provide a direct selective advantage to commensal SSuT *E. coli* in dairy calves.
- Subbiah, M, P Friel, and DR Call. Mechanisms of long-term persistence of large, multi-drug resistance plasmids that confer resistance to 3rd generation cephalosporins.
- Allen, J, A Fischer, H Palmer, M Beutel, and DR Call. Biological ammonia removal in oxygenated constructed treatment wetlands.

American Fisheries Society Fish Health Section Annual Meeting, Charlottetown, Prince Edward Island, June 2008.

- *Lloyd Sonja*, S LaPatra, K Snekvik, S St-Hilaire, K Cain, DR Call. Strawberry disease lesions in rainbow trout are associated with a *Rickettsia*-like organism. Oral presentation.
- Shah, D, K Cain, G Wiens, and DR Call. An alternate expression system for the production of recombinant *Flavobacterium psychrophilum* proteins for development of a cold water disease vaccine in rainbow trout.

49th Western Fish Disease Workshop, Ocean Shores, WA, June 23-25, 2008.

- *Lloyd SJ*, SE LaPatra, KR Snekvik, S St-Hilaire, KD Cain, DR Call. Strawberry disease lesions in rainbow trout are associated with a *Rickettsia*-like organism. *Oral Presentation*.
- *Snekvik KR*, S LaFrentz, DR Call. A DNA suspension microarray for the detection of infectious hematopoietic necrosis virus, viral hemorrhagic septicemia virus and infectious pancreatic necrosis virus

American Fisheries Society Washington – British Columbia Chapter (formerly North Pacific International Chapter) Annual General Meeting, Bellingham WA, 2008. Lloyd SJ, LaPatra, Snekvik, St-Hilaire, Cain, Call. Strawberry disease lesions in rainbow trout are associated with a *Rickettsia*-like organism. *Oral Presentation*.

NIH-NIAID Integrated Research Network, Calloway Gardens, GA, April 2-3, 2008.

- Shah, Orfe, Cunha, Dasgupta, Call. Acid and bile-stress induced transcriptomes of epidemic and environmental strains of *Listeria monocytogenes*.
- Call, Orfe, Davis, LaFrentz, Kang. Impact of compounding error on strategies for subtyping pathogenic bacteria.
- Call, Besser, Singer, Kappmeyer, Anderson, Zhang, Daniels, Friel. Sequence analysis of three plasmids that convey resistance to third generation cephalosporins in *Escherichia coli* and *Salmonella enterica*.
- Zhou, Shah, Konkel, Call. T3SS1 genes in *Vibrio parahaemolyticus* are positively regulated by *exsA* and negatively regulated by *exsD*.
- Straub, Bartholomew, Valdez, Valentine, Warner, Bruckner-Lea, Gerba, Coghlan, Nickerson. Quantitative Evidence of Human Norovirus Replication in an *in vitro* 3-Dimensional Model of Small Intestinal Epithelium.
- Davis, Besser, Lanier, Broschat, Orfe, New, Call. Disparities between antibiotic resistance genotypes and phenotypes from calf-origin, commensal *Escherichia coli*.

WSU Showcase, Pullman, WA, 28 March 2008.

- Zhou, Shah, Konkel, Call. T3SS1 genes in *Vibrio parahaemolyticus* are positively regulated by *exsA* and negatively regulated by *exsD*.
- Shah, Orfe, Cunha, Dasgupta, Call. Acid and bile-stress induced transcriptomes of epidemic and environmental strains of *Listeria monocytogenes*.
- Call, Orfe, Davis, LaFrentz, Kang. Impact of compounding error on strategies for subtyping pathogenic bacteria.
- Lloyd, Snekvik, LaPatra, St-Hilaire, Cain, Call. A rickettsia-like bacterium is associated with strawberry disease lesions in rainbow trout.
- Meng, Broschat, Call. PLASMID: A tool for designing optimal plasmid microarrays.

2007

42nd United States–Japan Conference on Cholera and Other Bacterial Enteric Infections, Austin, Texas, 5-7 December 2008. Zhou, Konkel, and Call, “Type III secretion system 1 of *Vibrio parahaemolyticus* induces oncosis in both epithelial and monocytic cell lines.”

2nd Symposium on Antimicrobial Resistance in Animals and the Environment, Tours Centre International de Congrès de Loire, France, 17-19 December 2007. Davis, Besser, Call, Hancock and Davis, “Antimicrobial resistance in bovine-origin *Salmonella enterica* and *Escherichia coli*, Pacific Northwest, United States,” poster.

8th Annual College of Veterinary Medicine Research Symposium, October 17, 2007. Posters

- Chen, Davis, LaPatra, Cain, Snekvik, and Call, “Genetic diversity of *Flavobacterium psychrophilum* recovered from commercially raised rainbow trout and spawning Coho salmon.”
- Dobry, Daniels, Orfe, Besser, and Call, “Characterization of antimicrobial resistance in atypical *E. coli* and *Klebsiella pneumoniae*.”
- Lanier, Davis, Call, Besser, and Broschat, “Evidence for dysfunctional antibiotic resistance genes in commensal populations of *Escherichia coli*.”
- Lloyd, Snekvik, St-Hilaire, LaPatra, Cain, and Call, “A rickettsia-like organism is associated with strawberry disease lesions in rainbow trout.”
- Otto, Subbiah, Shah, Zhou, and Call. Potential of *Vibrio parahaemolyticus* as a vector for fish vaccination.”
- Zhou, Konkel, and Call, “Type III secretion system 1 in *Vibrio parahaemolyticus* induces oncosis in both epithelial and monocytic cell lines.”

WSU Center for Integrated Biotechnology, Pullman, WA, September 21, 2007.

- Meng, Call and Broschat, “PLASMID: A tool for designing optimal plasmid microarrays,” poster.
- Lanier, Davis, Call, Besser, and Broschat, “Evidence for dysfunctional antibiotic resistance genes in commensal populations of *Escherichia coli*.”

AAVLD, Reno, Nevada, Oct 2007. Daniels, Call, and Besser, “Consolidation of virulence and antimicrobial resistance genes on plasmids of *Salmonella* Dublin. Dr. Daniels received the Best Graduate Student Presentation award for his oral presentation of this work.

Flavobacterium 2007, Shepherdstown, WV, 2-4 May 2007

- Call, Soule, Shah, LaFrentz, Chen, Ramsrud, Kang, LaFrentz, Cain, LaPatra, and Wiens, “*Flavobacterium psychrophilum* is composed of two distinct genetic lineages,” oral pres.
- Shah, Cain, Wiens, and Call, “Effects of codon usage bias on recombinant expression of *Flavobacterium psychrophilum* proteins in *E. coli*,” oral pres.
- Cain, Lindstrom, Hamilton, House, and Call, “A quantitative enzyme-linked immunosorbent assay (ELISA) and filtration-based fluorescent antibody test as potential tools for screening *Flavobacterium psychrophilum* in broodstock,” oral pres.
- Cain, LaFrentz, Lindstrom, LaPatra, and Call, “Electrophoretic and Western blot analysis of the lipopolysaccharide and glycocalyx of *Flavobacterium psychrophilum*,” oral pres.
- Wiens, Welch, Rexroad, LaPatra, Call, Hunnicutt, Bhattacharyya, Campbell, and Walunas, “Complete genome sequence of *Flavobacterium psychrophilum* strain CSF 259-93 and characterization of a large cluster of genes encoding leucine-rich repeats,” oral pres.
- Cain, Sudheesh, LaFrentz, Call, Siems, LaPatra, and Wiens, “Identification of potential vaccine target antigens by immunoproteomic analysis of a virulent and a non-virulent strain of the fish pathogen *Flavobacterium psychrophilum*,” poster.
- Chen, LaFrentz, Davis, LaPatra, Cain, and Call, “Genetic variation of *Flavobacterium psychrophilum* examined by pulse-field gel electrophoresis,” poster.

WSU Showcase, Pullman, WA, 23 March 2007. Posters.

- *Davis, Hancock, Call, Besser and Baker, “Emerging strain of multi-drug-resistant Salmonella enterica serovars Typhimurium, Northwest United States”*
- *Leach, Call, and Broschat, “A discrete, stochastic model and correction method for bacterial source tracking”*
- *Call, Kappmeyer, Kang, Daniels, Brayton, and Besser, “Defining the genetic context of blaCMY-2 beta-lactamase genes in plasmids from Escherichia coli and Salmonella enterica”*
- *Lloyd, Hilaire Snekvik, Cain, and Call, “Identifying the etiological agent of strawberry disease in rainbow trout.”*
- *Orfe and Call, “Transcriptional signatures of epidemic Listeria monocytogenes”*
- *Zhou, Konkel and Call, “Identification of Type III secretion proteins from Vibrio parahaemolyticus”*

ASM—NW Branch meeting, March 2007. Leach, Call, and Broschat, “A discrete, stochastic model and correction method for bacterial source tracking,” poster.

WSU-Wiley Research Symposium, March 2007. Lloyd, St-Hilaire, Snekvik, Cain, and Call, “Identifying the etiologic agent of strawberry disease in rainbow trout,” poster.

Aquaculture ID-WA Research Review, Moscow, ID, January 16-17, 2007. Presentations.

- *Cain and Call. “Comparative genomics and proteomics of Flavobacterium psychrophilum: moving toward vaccine development.” Co-presentation.*
- *Call, Snekvik, Cain, St. Hilaire, Lloyd, and LaPatra. “Identifying the etiologic agent of Strawberry Disease in rainbow trout.*

2006

U.S.—Japan Cholera meeting, Nov 5-7, 2006, Gifu, Japan. Konkel, Zhou, Christensen, and Call. “Identification of Type III secretion proteins from *Vibrio parahaemolyticus*.”

8th Annual College of Veterinary Medicine Research Symposium, October 18, 2006. Posters.

- *Kang, Besser, Hancock and Call. Fitness-associated expression changes of specific genes conserved in contemporary epidemic strains of Salmonella enterica.*
- *Zhou, Christensen, Bej, Konkel, and Call. Identification of Type III secretion proteins from Vibrio parahaemolyticus.*
- *Orfe, Orozco, and Call. Phenotypic and gene expression differences in Listeria monocytogenes strains under different stress conditions.*
- *Wan, Broschat, Call. Validation of mixed-genome microarrays as a model for genetic discrimination.*
- *Chen, Davis, Cain, and Call. Genetic variation of Flavobacterium psychrophilum examined by pulse-field gel electrophoresis.*

NIH-NIAID Integrated Research Network, Lake Tahoe, CA, September 19-22, 2006. Posters.

- *Duricka and Call. “A multi-probe, high-throughput suspension array for subtyping Listeria monocytogenes.”*

- Call, Konkel and Bej. "Identification of Type III secretion proteins from *Vibrio parahaemolyticus*."
- Call, Besser, Brayton, Kang, Daniels, and Kappmeyer. "Defining the genetic context of *bla*_{CMY-2} β -lactamase genes in plasmids from *Escherichia coli* and *Salmonella enterica*."
- Orfe and Call. "Transcriptional signatures of epidemic *Listeria monocytogenes*."

5th International Symposium on Aquatic Animal Health, San Francisco, CA, September 2-6, 2006. LaFrentz, Lindstrom, LaPatra, Call, and Cain. "Analysis of *Flavobacterium psychrophilum* carbohydrate antigens and their potential role in protective immunity." Poster.

WSU Center for Integrated Biotechnology, Moscow, ID, September 22, 2006.

- Call. "Development and testing of library-independent genetic markers for bacterial source tracking." Presentation.
- Wan, Broschat, and Call. "Validation of mixed-genome microarray as a method for genetic discrimination." Poster.

47th Western Fish Disease Workshop, Victoria, BC, June 26-28, 2006. LaFrentz, Lindstrom, LaPatra, Call, and Cain. "An analysis of *Flavobacterium psychrophilum* carbohydrate antigens and their potential role in protective immunity." Poster.

WSU Showcase, Pullman, WA, March 24, 2006. Posters.

- Call, Kang, Daniels, and Besser. "Assessing genetic diversity in plasmids from *Escherichia coli* and *Salmonella enterica* using a mixed-plasmid microarray."
- Satterwhite, LaFrentz, and Call. "Coupling multiplex PCR with suspension arrays to detect genetic markers of fecal pollution."
- Kang, Besser, and Call. "Identification of genetic elements in *Escherichia coli* and *Salmonella enterica* plasmids that confer resistance to expanded-spectrum cephalosporins."

Northwest Branch ASM meeting, University of Washington, Seattle, WA, March 10-12, 2006. Posters.

- Call, Kang, Daniels, and Besser. "Assessing genetic diversity in plasmids from *Escherichia coli* and *Salmonella enterica* using a mixed-plasmid microarray."
- Satterwhite, LaFrentz, and Call. "Coupling multiplex PCR with suspension arrays to detect genetic markers of fecal pollution."

Aquaculture ID-WA Research Review, Pullman, WA, March 8-9, 2006. Cain and Call.

"Comparative genomics and proteomics of *Flavobacterium psychrophilum*: moving toward vaccine development." Co-presentation.

USDA-CSREES Water and Watershed Program meeting, San Antonio, TX, Feb 6-8, 2006. Call, Plescia, Kuhn and Soule. "A field test of library-independent genetic markers for bacterial source tracking." Poster.

2005:

7th Annual College of Veterinary Medicine Research Symposium (20 Oct 2005). Posters.

- Wan, Broschat, and Call. Using mixed-genome microarrays to derive intra-specific, phylogenetic relationships for bacteria.

- Kang, Besser, and Call. Identification of genetic elements in *Escherichia coli* and *Salmonella enterica* plasmids that confer resistance to expanded-spectrum cephalosporins.
- Elmore, Zhou, Broschat, and Call. Survival of wildtype and *hlyA* mutant *Listeria monocytogenes* after ingestion by *Acanthamoeba castellanii*.
- Khachatryan, Hancock, Besser, and Call. Introduction of antimicrobial susceptible *Escherichia coli* in newborn calves does not impact the prevalence of antimicrobial resistant commensal *E. coli*.
- Zhou, Elmore, Broschat, and Call. Evolution of *Listeria monocytogenes* virulence.

Research-in-progress seminar, Department of Veterinary Microbiology and Pathology, WSU, Pullman, WA, 13 September 2005. Call, "Flavobacterium psychrophilum: Etiologic agent of the "other" CWD." Presentation.

WSU Center for Integrated Biotechnology, annual retreat, Moscow, ID, 9 September 2005. Posters.

- Call, Plescia, Kuhn, and Soule. "Microbial source tracking on the Colville River watershed—a test of library-independent genetic markers."
- Kang, Besser, and Call. "Identification of genetic elements in *Escherichia coli* and *Salmonella enterica* plasmids that confer resistance to expanded-spectrum cephalosporins."
- Leach, Call, and Broschat. "Isolation of genetic markers for tracking Canada geese fecal contamination in water."

American Fisheries Society/Fish Health Section, Minneapolis, MN, 27-29 July 2005. Cain, PS Sudheesh, SE LaPatra, GD Weins, BR LaFrentz and DR Call, "Identification and expression of an immuno-reactive heat shock protein from *Flavobacterium psychrophilum*," presentation.

WSU and UI Center for Reproductive Biology, Annual Retreat, 24-25 June 2005. Khachatryan, Hancock, Besser, and Call, "Introduction of antimicrobial susceptible *Escherichia coli* in newborn calves does not impact the prevalence of antimicrobial resistant commensal *E. coli*," poster.

Western Fish Disease Workshop, Boise, ID, 27-29 June 2005. Soule, LaFrentz, Cain, LaPatra, and Call, "Combining suppression subtractive hybridization and microarrays to map the intra-specific phylogeny of *Flavobacterium psychrophilum*," presentation.

ASM Annual meeting, Atlanta, Georgia, June 2005. Khachatryan, Hancock, Besser, and Call, "Introduction of antimicrobial susceptible *Escherichia coli* in newborn calves does not impact the prevalence of antimicrobial resistant commensal *E. coli*," poster. Art received an ASM Graduate Student travel award for his abstract.

CVM Annual Conference, Pullman, WA, 15 April 2005. Call, "Syndrome specific diagnostics," presentation.

Annual Northwest Reproductive Sciences Symposium, Seattle, WA, 22-23 April 2005. Soule, LaFrentz, Oatley, Krug, LaFrentz, Cain and Call. Comparative genetics of virulent and avirulent strains of *Flavobacterium psychrophilum*, etiological agent for cold water disease in salmonids," poster.

WSU Academic Showcase, Pullman, WA, 1 April 2005, posters presented.

- *Broschat*, S, DR Call , F Loge, and E Kuhn, “A comparison of the reflectance assay with the Crystal Violet assay for the measurement of biofilm formation”
- *Call*, DR, MS Kang, J Daniels, T Besser, “Assessing genetic diversity within and between plasmids from *Escherichia coli* and *Salmonella enterica* using a mixed-plasmid microarray”
- *Kang*, MS, T Besser, and DR Call, “Identification of a genetic element in *Escherichia coli* and *Salmonella enterica* plasmids that confers resistance to expanded-spectrum cephalosporins”
- *Khachatryan*, A, T Besser, D Hancock, DR Call, “Role of calf-adapted *Escherichia coli* in maintenance of antimicrobial drug resistance in dairy calves”
- *Kuhn*, E, M Soule, F Loge, J Gay, DR Call, “Identifying host-specific markers of fecal pollution using mixed-genome microarrays”
- *LaFrentz*, S, N Lindstrom, K Cain, M Soule, DR Call, “Development of a sandwich ELISA for detection of *Flavobacterium psychrophilum*, etiological agent of Bacterial Coldwater Disease in salmonids”
- *Leader Elmoose*, J, and DR Call, “Effects of probe length variation on DNA microarray hybridizations”
- *Lloyd*, S, DR Call, T Besser, D Hancock, and R Cobbold, “Molecular epidemiology of plasmids that are harbored by shigatoxigenic *Escherichia coli*”
- *Reynolds*, J, DR Call, T Ward, B Page, J Kadushin, and DR Call, “Suspension microarrays for direct and high throughput subtyping of *Listeria monocytogenes* genomic DNA”
- *Soule*, M, S LaFrentz, K Cain, S LaPatra, and DR Call, “Combining suppression subtractive hybridization and microarrays to map the intra-specific phylogeny of *Flavobacterium psychrophilum*”

USDA-CREES National Water Quality Conference, 7 Feb—9 Feb, 05. San Diego, CA. *Call*, Soule, Loge, and Gay, “Identifying host-specific markers of fecal pollution using mixed-genome microarrays,” presentation.

Aquaculture, ID-WA Research Review, Pullman, WA, Feb 2005.

- *Call*, Cain, and Snekvik, “Development of a quantitative ELISA to detect *Flavobacterium psychrophilum* for broodstock management,” presentation.
- *Cain*, *Call*, Sudheesh, LaFrentz, LaPatra, and Soule, “Comparative genomics and proteomics of *Flavobacterium psychrophilum*,” presentation.

Research-in-progress Seminar, VMP, 25 Jan 2005: *Khachatryan*, “Role of calf-adapted *Escherichia coli* in maintenance of antimicrobial drug resistance in dairy calves.”

2004:

6th Annual College of Veterinary Medicine Research Symposium (14 Oct 2004)

- *Elmoose*, Lane and Call. Effects of probe length and secondary structures on DNA microarray hybridizations.
- *Kang*, Davis, Hancock, Besser, and Call. Characterization of *Salmonella enterica* serovar Newport isolated from Cattle.

- *Khachatryan*, Hancock, Besser, and Call. The role of calf-adapted *Escherichia coli* in maintenance of antibiotic resistance in dairy calves.
- *Lane*, Cain, and Call. Development of monoclonal antibodies for detection of the fish pathogen *Flavobacterium psychrophilum*.
- *Lloyd*, Call, Besser, Hancock, and Cobbold. Plasmid Ecology of Shigatoxigenic *Escherichia coli* from human and bovine sources in Washington State.
- *Soule*, LaFrentz, Oatley, Krug, LaFrentz, Cain and Call. Comparative genetics of virulent and avirulent strains of *Flavobacterium psychrophilum*, etiological agent for cold water disease in salmonids.

Bacterial Coldwater Disease Working Group, Seattle, WA, FLAVO meeting, Seattle, 8 Sept 04. *Soule*, Cain, LaFrentz, and *Call*. Virulent and avirulent *Flavobacterium psychrophilum* strains compared using suppression subtractive hybridization and microarrays,” oral presentation.

Center for Integrated Biotechnology Retreat, Moscow, ID, 3 Sep 04. *Soule*, LaFrentz, Oatley, Krug, LaFrentz, Cain and Call, “Comparative genetics of virulent and avirulent strains of *Flavobacterium psychrophilum*, etiological agent for coldwater disease in salmonids,” poster.

WSU & UI Center for Reproductive Biology, Annual Retreat, ID, June 2004.

- *Khachatryan*, Hancock, Besser and Call. “Loss of antibiotic resistance genes from calf-adapted *E. coli* results in enhanced competitive advantage over wild-type *E. coli*,” poster.
- *Warsen*, A., *D. Stanek*, M. Krug, S. *LaFrentz*, F. Loge, and D. R. Call. Pathogen detection using 16S PCR and DNA microarrays
- *Soule*, LaFrentz, Oatley, Krug, LaFrentz, Cain and Call. “Comparative genetics of virulent and avirulent strains of *Flavobacterium psychrophilum*, etiological agent for cold water disease in salmonids,” poster.

ZRU Diagnostics Workshop, Cornell University, Cornell, NY, 28-29 June 04. Lead discussion section on nucleic acid-based diagnostic platforms.

ASM Annual meeting, New Orleans, LA, May 2004.

- *Besser* and Call. “Shared genetic content of *Escherichia coli* and *Salmonella enterica* plasmids encoding extended spectrum cephalosporin resistance revealed by mixed plasmid microarray,” poster
- *Borucki*, Kim, Reynolds, Orozco, Call, Smole, and Pagotto. “Discrimination of *Listeria monocytogenes* epidemic subtypes using a mixed genome DNA microarray,” poster.
- *Khachatryan*, Hancock, Besser and Call. “Loss of antibiotic resistance genes from calf-adapted *E. coli* results in enhanced competitive advantage over wild-type *E. coli*,” poster.
- *Soule*, LaFrentz, Oatley, Krug, LaFrentz, Cain and Call. “Comparative genetics of virulent and avirulent strains of *Flavobacterium psychrophilum*, etiological agent for cold water disease in salmonids,” poster.

AAAS Annual meeting, Seattle, WA 2004. *Soule*, LaFrentz, Oatley, Krug, Cain and Call “Virulent and avirulent strains of *Flavobacterium psychrophilum* compared using suppression subtractive hybridization,” poster.

RIP Seminar, VMP, 10 Feb 2004. *Khachatryan* (Graduate student), “The role of calf-adapted *Escherichia coli* in maintenance of antibiotic resistance in dairy calves”

Bacterial Coldwater Disease Workgroup, USGS Western Fisheries Research Center, Seattle, WA, 5 Feb 2004. *Call* and *Cain*, "Comparative genomics and proteomics for identification of virulence and immunogenic antigens.

Aquaculture, ID-WA Research Review, Moscow, ID, 4 Feb 2004.

- *Call* and *Cain*, "Comparative genomics and proteomics for identification of virulence and immunogenic antigens.
- *Call*, "Sensitivity and specificity of a DNA microarray detector for *Renibacterium salmoninarum*."

WSU-CRB-Seminar, 21 Jan 04. *Khachatryan*, "What makes antibiotic resistant *E. coli* calf-adapted and why should we care?" (lab graduate student), presentation.

CVM-VMP-RIP seminar, 20 Jan 04. *Soule*, "Virulent and avirulent strains of *Flavobacterium psychrophilum* compared using suppression subtractive hybridization" (lab postdoc), presentation.

USDA-CSREES National Water Quality Conference, Clearwater, FL, January 2004. *Call*, *Soule*, *Loge*, and *Gay*. "Identifying host-specific markers of fecal pollution using mixed-genome microarrays," presentation.

2003:

CRWAD meeting, Chicago, IL, November 2003.

- *Bae*, *Kaya*, *Hancock*, *Call*, *Park*, and *Besser*. "Prevalence and antimicrobial resistance of thermophilic *Campylobacter* sp. isolated from cattle farms in the northwestern United States," presentation.
- *Besser* and *Call*. "Analysis of plasmid structure and content using a mixed plasmid DNA microarray," presentation.
- *Pruitt*, *Call*, *Hancock*, and *Besser*. "Identification and characterization of cattle-origin *E. coli* with reduced susceptibility to ceftazidime," presentation.

ASM Biofilm meeting, Vancouver, BC, November 2003.

- *White*, *Peppin*, *Loge*, *Broschat*, and *Call*. "A rapid reflectance-based assay for bacterial biofilms on opaque and non-opaque surfaces," poster.
- *Peppin*, *White*, *Loge*, *Broschat*, and *Call*. "Analysis of differential biofilm invasion of *Salmonella enterica* isolates," poster.

Tacoma-Pierce County Task Force on Antimicrobial Resistance, FARMER grant advisory board, Seattle, WA, 24 October 2003. *Hancock* and *Call*, "The case against medicated milk replacers," presentation.

5th Annual College of Veterinary Medicine Research Symposium (9 Oct 2003)

- *Foreyt*, *A.*, *E. Kuhn*, *D. White*, *S. Broschat*, *D. R. Call*, and *F. Loge*. Using reflectance to detect *Enterococcus faecalis* biofilm and biofilm components.
- *Kang*, *M.*, *D. D. Hancock*, *D. H. Rice*, *T. E. Besser*, and *D. R. Call*. Genetic diversity and clonality of *Salmonella enterica* serovar Newport in Cattle populations.

- *Khachatryan*, A. R., D. D. Hancock, T. E. Besser, and D. R. Call. Experimental demonstration of elevated fitness for antibiotic resistant *E. coli* both in rich media and in the intestinal lumen of dairy calves.
- *Kime*, S. H., E. Orozco, J. Reynolds, Y. H. Park, D. R. Call, K. Bayles, and Monica Borucki. Genetic characterization of *Listeria monocytogenes* using DNA microarrays.
- *Lane*, S., J. Evermann, F. Loge, and D. R. Call. Amplicon secondary structure interferes with microarray hybridizations.
- *Odunayo*, A., D. Bradway, F. Rurangirwa, T. McElwain, and D. R. Call. Testing the specificity of 16S oligonucleotide probes using a planar microarray: Phase I of a bead detection system for *Mycoplasma* pathogens.
- *Pacheco*, S. Y. Zhang, T. E. Besser, and D. R. Call. Microarray analysis of plasmid sequences shared between *Enterobacter* and *E. coli/Salmonella* strains.
- Borucki, M., J. *Peppin*, D. White, F. Loge, and D. R. Call. Variation in biofilm formation among strains of *Listeria monocytogenes*.
- *Pruiett*, C., D. R. Call, D. D. Hancock, and T. E. Besser. Identification and characterization of cattle-origin *E. coli* with reduced-susceptibility to ceftazidime.
- *Soule*, M., S. LaFrentz, M. Oatley, M. Krug, K. Cain, and D. R. Call. Virulent and avirulent strains of *Flavobacterium psychrophilum* compared using suppression subtractive hybridization.
- *Warsen*, A., D. Stanek, M. Krug, S. LaFrentz, F. Loge, and D. R. Call. Pathogen detection using 16S PCR and DNA microarrays.
- *White*, D., J. Peppin, F. Loge, S. Broschat, and D. R. Call. A rapid reflectance-based assay for bacterial biofilms on opaque and non-opaque surfaces.

Dept. of Statistics, WSU, Pullman, "An introduction to DNA microarrays: what are they, how are they applied and what are some of the challenges?" 16 Sept 2003.

Dept. of Chemical Engineering, WSU, Pullman, Application of DNA microarrays to pathogen detection and comparative genomics, 3 Mar 03.

WSU Center for Integrated Biotechnology, Moscow, ID, 11-12 September 2003.

- *White*, Peppin, Loge, Broschat, and Call. "A rapid reflectance-based assay for bacterial biofilms on opaque and non-opaque surfaces," poster.
- *Soule*, LaFrentz, Oatley, Krug, Cain, and Call. "Virulent and avirulent strains of *Flavobacterium psychrophilum* compared using suppression subtractive hybridization," poster.
- *Call*, Soule, Oatley, Krug, LaFrentz, Loge, and Gay. "Identifying host-specific markers of fecal pollution using mixed-genome microarrays," poster.
- *Peppin*, White, Loge, Call, and Borucki. "Investigation of intraspecific variation in biofilm formation among *Listeria monocytogenes*," poster.

WSU & UI Center for Reproductive Biology, Annual Retreat, ID, June 2003. *Khachatryan*, Hancock, Besser, and Call. "Experimental demonstration of elevated fitness for antibiotic resistant *E. coli* in broth media and in neonatal dairy calves."

International Association for Food Protection (IAFP), New Orleans, Aug 2003. *Submitted abstract*. Panicker, Call and Bej. "Detection of total and pathogenic *Vibrio vulnificus* using PCR and DNA-array hybridization," poster.

AFS-FHS Annual meeting, Seattle, WA, Jul 2003. Warsen, Stanek, Krug, Wallace, Loge, and Call. "Simultaneous detection of multiple fish pathogens using DNA microarrays," poster.

American Fisheries Society, Propagated fish in resource management, Boise, ID, 16 Jun 2003. Warsen, Stanek, Krug, Wallace, Loge, and Call. "Simultaneous detection of multiple pathogens using DNA microarrays," poster.

ASM, Washington D.C., May 2003.

- Panicker, Lee, Bej and Call. "Detection of pathogenic bacteria in shellfish using multiplex PCR followed by Covalink™ NH and DNA-array hybridizations."
- Peppin, White, Loge, Call, and Borucki. "Investigation of intraspecific variation in biofilm formation among *Listeria monocytogenes*."
- Call, Lane, Krug and Gonzalez. "Amplicon secondary structure interferes with microarray hybridizations."
- Khachatryan, Hancock, Besser, and Call. "Experimental demonstration of elevated fitness for antibiotic resistant *E. coli* in broth media and in neonatal dairy calves."
- Bakko, Krug, Roberts and Call. "Identification of antibiotic resistance genes using DNA microarrays."
- Warsen, Stanek, Krug, Wallace, Loge, and Call. "Simultaneous detection of multiple fish pathogens using DNA microarrays."

WSU Water Quality Research & Extension Colloquium, Pullman, WA, 24 Apr 2003. Call, "Source tracking fecal pollution: An overview of potential advances with microarray technology."

2003 Northwest Reproductive Sciences Symposium, Moscow, ID, 18 Apr 2003. Call, "Application of DNA microarrays to pathogen detection and comparative genomics."

Northwest Scientific Association, Forks, WA, 27 Mar 2003. Call, Warsen, Stanek, Krug, Wallace and Loge, "Simultaneous detection of multiple fish pathogens using DNA microarrays."

NW Fisheries Science Center – Washington State University and University of Idaho Cooperative Science Program on Salmon Recovery, Seattle, WA, Mar 20-21, 2003. Call, "Simultaneous detection of fish pathogens using DNA microarrays."

Advocates of Critical Thinking, Spokane, WA, 3 Mar 2003. Call, "The fundamentals of evolution – one biologist's perspective."

Aquaculture Idaho-Washington Research Review, Moscow, ID, 29 Jan 03.

- Cain and Call. "Comparative genomics and proteomics of *Flavobacterium psychrophilum*."
- Call, Cain and Loge. "Development of signature-tagged mutagenesis system: the pathogenesis of *Flavobacterium* species."

Research in progress seminar, VMP, Pullman, WA. Call, "From surf to turf: Pathogen detection and gene hunting with DNA microarrays," Jan 28 2003

2002:

CVM Student Research Symposium, Pullman, WA, 8 Oct 2002, posters.

- Bakko, Krug, and Call. "Identification of resistance genes using DNA microarrays"
- Lane, Evermann, and Call. "Optimizing assay design for detecting PCR amplicons with DNA microarrays"
- Warsen, Call, Stanek and McElwain. "Simultaneous detection of multiple salmonid pathogens using a DNA microarray"
- Khachatryan, Hancock, Besser and Call. "The role of calf-adapted *Escherichia coli* in maintenance of antibiotic resistance in dairy calves"
- Lahmers, McNabb, Wu, Labeit, Call and Granzier. "Titin splice variants in muscle development"
- Peppin, White, Loge and Call. "Investigation of cellular and molecular interactions in developing *Enterococcus faecalis* biofilm"

F.A.R.M.E.R. Project Advisory Board, Seattle, WA. Call. "Background on antimicrobial resistance and antibiotic use in animal agriculture," seminar, 18 Sep 2002.

WSU & U of I Center for Reproductive Biology, summer retreat, Jun 2002, posters.

- Warsen, Call, Stanek and McElwain. "Simultaneous detection of multiple salmonid pathogens using a DNA microarray"
- Khachatryan, Hancock, Besser and Call. "The role of calf-adapted *Escherichia coli* in maintenance of antibiotic resistance in dairy calves"

International Association for Food Protection (IAFP), Borucki and Call "Subtyping *Listeria monocytogenes* using DNA microarrays," seminar, Jul 2002.

School of Biological Sciences, WSU, Pullman. "The multifaceted role of DNA microarrays in pathogen detection," 01/02.

ASM, Salt Lake City, UT, May 2002, posters.

- Khachatryan, Hancock, Besser, Call. "The Role of Calf-adapted *Escherichia coli* in Maintenance of Antibiotic Resistance in Dairy Calves." Recipient of ASM student travel award for high quality abstract submission.
- Borucki, Muraoka, Krug, Reynolds, Call. "Discrimination among *Listeria monocytogenes* isolates using a mixed genome DNA microarray."
- Small, Wunschel, Straub, Daly, Call, Chandler. "Demonstrating a microarray-based fingerprinting method using *Salmonella* isolates."

Salmon Recovery Symposium, Moscow, ID. Call. "Simultaneous detection of multiple salmonid pathogens using DNA microarrays," Mar 2002. Seminar and poster presentations.

Columbia Basin Fish & Wildlife Authority, project proposal presentations, Wenatchee, WA. Loge, Call and Barber. "Salmonid pathogens in the Columbia Cascade Province," proposal presentation, Feb 02.

2001:

DARPA, Washington, DC, Dec 2001.

- *Call* and Borucki. "Mixed genome microarrays – a powerful tool for identifying genomic variation within species," seminar.
- *Call*. Served as member of panel discussion on "Genotyping: Technology Issues and Opportunities."

Food Safety Farm To Table Conference, Moscow, ID. "A primer/refresher on the genetic mechanisms of antibiotic resistance," 5/01.

WSU & UI Salmon Recovery Program and National Marine Fisheries Service Meeting, Spokane, WA. *Call* and McElwain. "Microarray detection of multiple pathogens in managed and wild salmon populations," Nov 2001.

CVM Student Research Exposition, Pullman, WA. Oct 2001, posters.

- *Davis*, Hancock, *Call* and Besser. "Evaluation of Pulsed Field Gel Electrophoresis for Studying the Molecular Epidemiology of *Escherichia coli* O157:H7"
- *Lahmers*, Wu, Labeit, *Call* and Granzier. "The Titanic Chip: Characterizing exon splicing events and titin isoform expression in dilated cardiomyopathy with an exon microarray."

6th International Veterinary Immunology Symposium, Uppsala, Sweden. *Davies*, Reynolds and *Call*. "Microarray based MHC typing for cattle," July 2001.

ASM, Orlando, FL. May 2001, posters.

- *Small*, Zachara, Straub, *Call* and Chandler. "Detection of unamplified 16S RNA from soil bacteria using microarrays."
- *Straub*, *Call*, Kingsley, and Chandler. "Using DNA Microarrays to fingerprint *Escherichia coli* and *Xanthomonas axonopodis* pv. *Citri*."

The National Food Safety and Toxicology Center, East Lansing, MI, May 2001, posters.

- *Call* and Roberts. "Detecting antibiotic resistance using DNA microarrays."
- Hancock, Besser, *Call*, Lejeune, *Davis*, Gay, Gay, and Rice. "Investigations of the role of animal feed hygiene in the epidemiology of foodborne diseases in humans."

2000:

ASM, Los Angeles, CA, May 2000, posters.

- *Call*, Chandler, Brown, Stottlemyer, Jutras and Brockman. "Detecting and genotyping pathogens using low-density microarrays."
- *Jutras*, *Call*, Brockman and Chandler. "Microbial community profiling using 16S microarrays."

Exp. Biology, San Diego, CA. Bolgos, Ebong, Newcomb, Nemzek, *Call* and Remick, "TNF-SR + IL-1RA therapy improves sepsis survival," poster, April 2000.

Northwest Scientific Association, Moscow, ID. *Call*, Chandler, Brockman, "Distinguishing between closely related bacterial isolates using a fingerprinting microarray," seminar, Mar 2000.

Pacific Northwest National Laboratory, Richland, WA, OBER Life Science Review. *Call*, Chandler, and Brockman, "Development and application of microarrays to environmental epidemiology," poster, Feb 2000.

Washington State University, Veterinary Microbiology and Pathology. *Call*. "Genetic characterization of food borne pathogens using oligonucleotide microarrays," seminar, Feb 2000.

Presentation titles before 2000 are available upon request.