

Jeff G. Leid

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BIOGRAPHICAL

Date/Place of Birth August 3, 1973, East Lansing, MI
Marital Status Married, Julie Oakason Leid

EDUCATION

1991-1995 University of Puget Sound, Tacoma, WA, B.S. in Chemistry, Varsity Letterman, Swimming, 4-years & National Championship (1995)
1995-2000 Montana State University, Bozeman, MT, Ph.D. in Immunology (April 2000); Department of Veterinary Molecular Biology. Title of Ph.D. Thesis, "Alteration of L-selectin by mAb, Cytoskeletal Association, and Fatty Acid Membrane Content"
2000-2001 Postdoctoral Research Fellow, Turner Enterprises, INC., Bozeman, MT, Veterinary Infectious Disease
2001-2002 Postdoctoral Research Fellow, Center for Biofilm Engineering, Montana State University, Bozeman, MT, Veterinary and Human Infectious Disease, Biofilm Immunology

PROFESSIONAL POSITIONS

1995-2000 Research Fellow, Department of Veterinary Molecular Biology, Montana State University, Bozeman, MT
2000-2001 Research Fellow, Turner Enterprises, INC., Bozeman, MT
2001-2002 Immunology Projects Director, Center for Biofilm Engineering, Montana State University, Bozeman, MT
2001-2002 Assistant Research Professor, Department of Cell Biology and Neuroscience, Montana State University, Bozeman, MT
2002-present Assistant Professor, Department of Biological Sciences, Northern Arizona University, Flagstaff, AZ
2005-present Associate Director, Center for Microbial Genetics and Genomics (commonly called the Center for Bioterrorism), Northern Arizona University, Flagstaff, AZ
2007-present Associate Professor with Tenure, Department of Biological Sciences, Northern Arizona University, Flagstaff AZ

HONORS, AWARDS, and other PROFESSIONAL ACTIVITIES (Service)

Honors

2001-2002 Vice President, Sweet Pea Festival of the Arts and Board of Directors, Bozeman, MT. Member, Board of Directors, 1997-2002
2002 Invited Participant, April 2nd-6th, NSF sponsored biofilm workshop, Copenhagen, DENMARK
2002-Present Invited Member, Flinn Foundation Bioengineering Technology Platform Committee, State of Arizona
2003 Invited Speaker, Biofilms 2003, Victoria, CANADA

Curriculum vitae for Jeff G. Leid

- 2003 Co-founder of the Strategic Alliance for Biotechnology Research and Education (SABRE), Northern Arizona University
- 2003 Judge, Minority Access to Research Careers Symposium, Northern Arizona University
- 2004 Hooper Undergraduate Research Awards Committee, Northern Arizona University
- 2004 Invited guest of the National Institute of Dental and Craniofacial Research panel to establish the Oral Biofilm Infrastructure Network (OBIN) at the National Institutes of Health
- 2004-Present National Board Member, Center for High Altitude Training, Flagstaff, AZ
- 2005 Invited participant, McGraw-Hill Symposium on Microbiology, Huntington Beach, CA
- 2005 Invited lecture for the Colorado State University Colloquium in the Life Sciences, October 2005. The invitation was extended from the graduate students in the life sciences at Colorado State University.
- 2005 Invited participant/lecturer in the University of Southern California School of Dentistry's Big Biofilm Bash, October 2005
- 2006 DeMiguel Elementary School Science Fair Judge, Flagstaff, AZ
- 2006 Invited Speaker, American Association of Immunologists, Boston, MA, May 2006
- 2006 Co-Chair, Flinn Foundation/Battelle Biosciences Symposium – Bioengineering Platform, Phoenix, AZ, June 2006
- 2006 Invited Editor and Chapter contributor, 'Biofilms in Device-Related Infections', 1 book in the '*Springer Series on Biofilms*', edited by J. William Costerton
- 2007 Golden Axe Distinguished Faculty Mentor, Northern Arizona University

Awards

- 1994-1995 Murdock Undergraduate Research Fellowship, University of Puget Sound, Tacoma, WA
- 2000 Sigma Xi Graduate Research Award, Montana State University, Bozeman, MT
- 2003 Invited Professor, Campbell Hall's Honor Tea, Fall 2003
- 2004 Invited Professor, Campbell Hall's Honor Tea, Spring 2004
- 2005 Invited Professor, Campbell Hall's Honor Tea, Fall 2005
- 2005 Fred Funk Service Award Recipient, Department of Biological Sciences, Northern Arizona University
- 2005 Who's Who Among America's Teachers, 2005. Nominated by a past student
- 2005 NAU Tri Beta Outstanding Professor of the Year
- 2005-Present Appointed Assistant Responsible Office (ARO) for Biosafety
- 2006 Invited Professor, Campbell Hall's Honor Tea, Spring 2006
- 2006 Leading Scientists of the World, International Biographical Center, Cambridge, England
- 2006-Present Chair, Northern Arizona University Institutional Review Board, Human Subjects, August 2006

Professional Activities

- 1997-2002 Institutional Review Board, Human Subjects, Montana State University, Bozeman, MT

Curriculum vitae for Jeff G. Leid

- 2000 Invited Guest Lecturer, Leiden University Medical Center, Leiden, THE NETHERLANDS
- 2000 Invited Guest Lecturer, College of Agriculture and College of Veterinary Medicine, University of Tennessee, Knoxville, TN
- 2001-Present Adjunct Reviewer, Journal of Laboratory and Clinical Medicine
- 2001-Present Adjunct Reviewer, Blood
- 2001-Present Review Committee, American Society for Microbiology Undergraduate Research Fellowship Program
- 2002-Present Adjunct Reviewer, FEMS Immunology
- 2002 Invited Guest Lecturer, Thompson Hall Science and Math Seminar, University of Puget Sound, Tacoma, WA
- 2002 Invited Guest Lecturer, Complex Biological Systems Seminar, Montana State University, Bozeman, MT
- 2002-Present Reviewer, Journal of Immunology
- 2002-2006 Departmental Undergraduate Program Committee, Biology Advising Center
- 2003 Invited Guest Lecture, Arizona State University, Department of Microbiology, April 2003
- 2003-Present Reviewer, FEMS Microbiology
- 2003-2004 Institutional Review Board, Biohazard Materials, Northern Arizona University
- 2003-Present Institutional Review Board on Technology and Commercialization, Northern Arizona University
- 2003 Member, Department of Biological Sciences Biotechnology Proposition 301 Faculty Search for an Assistant/Associate or Full Professor
- 2004 Invited Speaker, The University of Arizona College of Medicine, Department of Microbiology and Immunology, Tucson, AZ, Feb. 2004
- 2004-Present Institutional Review Board, Human Subjects, Northern Arizona University
- 2004 Invited Speaker, Department of Microbiology, Montana State University, October 2004
- 2004 Member, Department of Electrical Engineering Faculty Search Committee
- 2004 Invited Speaker, Center for Biofilm Engineering, Montana State University, 2004
- 2004 Member, Faculty Advisory Committee, Department of Biological Sciences
- 2005 Invited participant, Center for Microbial Genetics and Genomics, Genotyping Symposium, Northern Arizona University, Flagstaff, AZ
- 2005 Invited Participant, Mountain Campus Science Day, Flagstaff, AZ 2005
- 2005 Member, Department of Computer Science Faculty Search Committee
- 2005 Chair, Department of Biological Sciences Faculty Search Committee
- 2006 Invited Speaker, San Diego Naval Medical Center, January, 2006
- 2006 Western & Pacific/Southwest joint RCE meeting invited participant in New York, February, 2006
- 2006 National review panel for the USDA's National Research Initiative "Animal Protection", Washington, DC, May 2006
- 2006 Invited Scientist, Pacific Southwest Regional Center of Excellence for Biodefense and Emerging Infectious Diseases, Burkholderia Symposium, Colorado State University, Fort Collins, CO, June 2006
- 2006 Invited Seminar, University of Washington School of Medicine, Department of Microbiology and Immunology, August, 2006
- 2006 Invited Participant, Mountain Campus Science Day, Flagstaff, AZ
- 2006-Present Departmental Graduate Committee

Curriculum vitae for Jeff G. Leid

- 2006 STEP UP 2006, Group Leader for Bioengineering for a summer program for high school females interested in science, Northern Arizona University, July 2006
- 2006-Present Faculty Advisor, NAU Water Polo
- 2007 Invited speaker, ASM Biodefense meeting, Washington, DC, Feb.
- 2007 Invited speaker, Biofilms 2007, Quebec City, Quebec, Canada
- 2007 National review panel for USDA's National Research Initiative "Animal Protection", Washington, DC, May 2007

Summary of Honors, Awards and Professional Activities while at NAU

Honors: Multiple invitations to the Campbell Hall Honors Tea, Invited participate of the NIDCR panel to direct biofilm research through the NIH, Invited National Board Member of the Center for High Altitude Training, Invited to lecture at Colorado State University by the graduate students, Invited member of the Flinn Foundation's Bioscience Roadmap Committee, Invited participant in the University of Southern California's Biofilm Bash, Chosen co-Chair of the Bioengineering Platform for the Flinn Bioscience Roadmap, Invited Editor and Chapter contributor for the Springer Series on Biofilms

Awards: Fred Funk Service Award for the Department of Biological Sciences, Selected as NAU Tri Beta Outstanding Professor of the Year, Invited to lecture at Colorado State University by the graduate students, Invited Editor and Chapter contributor for the Springer Series on Biofilms

Professional Activities: 4 yrs service on the Undergraduate Program Committee, Invited Member of the Flinn Foundation Bioengineering Platform Committee, Internationally invited speaker to Biofilms 2003, Co-Founder (1 of 4) of the Strategic Alliance for Biotechnology Research and Education, Invited participate of the NIDCR panel to direct biofilm research through the NIH, Invited National Board Member of the Center for High Altitude Training, National Review Panel for USDA Animal Protection Study Section Panel, Chosen co-Chair of the Bioengineering Platform for the Flinn Bioscience Roadmap, Invited Editor and Chapter contributor for the Springer Series on Biofilms, active participant as a reviewer for many scientific journals.

*Those contributions that are joint are listed in BOTH categories.

Since 2005 – I have also helped numerous athletic teams recruit student/athletes to NAU

TEACHING ACTIVITIES

- 1999 Laboratory Instructor for:
VTMB 411, Hybridomas,
VTMB 412, Flow Cytometry,
VTMB 413, Advanced Immunology,
VTMB 414, Advanced Microscopy (also 2000)
- 1999 Guest Lecturer, Microbiology 401, Immunology, Cell Trafficking and Adhesion, Montana State University
- 2000 Guest Lecturer, General Studies 102, Ethical Implications of Stem Cell Research, Montana State University
- 2002 Guest Lecturer, Chemical Engineering 338, Medical Bacteriology and Immunology, Montana State University
- 2002 Guest Lecturer, Chemical Engineering 338, Cell and Tissue Engineering, and Bioprocess Engineering, Montana State University
- 2002 Guest Lecturer, Biology 112 and 311, Medical Biofilms, University of Puget Sound, Tacoma, WA

Curriculum vitae for Jeff G. Leid

- 2002-2005 BIO 205, Introduction to Microbiology for non-majors, Northern Arizona University, class contains between 80-160 students
- 2003-Present BIO 488, Medical Microbiology, capstone course for senior Microbiology Majors, Northern Arizona University, class contains between 20-35 students
- 2004 BIO/EE 199, Introduction to Biological Engineering, an introductory course for Electrical Engineering students interested in Biological Engineering, Northern Arizona University, this was the first joint taught class between engineering and biology
- 2004 BIO 502, Virology, a graduate course, Northern Arizona University
- 2005-Present BIO 375/575, Ecology of Infectious Disease, a co-convened undergraduate/graduate class, Northern Arizona University, class contained 47 students
- 2006 BIO 401, Immunobiology, class contains ~30 students
- 2006 BIO 346, Advanced Microbiology, 18 students
- 2007-Present BIO 205, Introduction to Microbiology, Northern Arizona University, class contains between 120-140 students

STUDENT THESIS COMMITTEES AND UNDERGRADUATE MENTORSHIP

Master's Thesis Defenses/Committees:

- Eric G. Thompson – Dr. Fernando Monroy, Chair – graduated 2003
Yvette E. Espinosa – Dr. Fernando Monroy, Chair – graduated 2003
Keehoon Lee – **Dr. Jeff G. Leid, Chair** – graduated summer 2006
Julie Getz – Dr. Fernando Monroy, Chair – graduated summer 2006
Jennifer Kofonow – **Dr. Jeff G. Leid, Chair** – graduated spring 2007
Jessica Collins – Dr. Egbert Schwartz, Chair – graduated summer 2007
Lars Neeling – Dr. Fleming – visiting student from Germany
Arne Gmerek – Dr. Fleming – visiting student from Germany

Doctoral Thesis Defenses/Committees:

- Jason Farlow – Dr. Paul Keim, Chair – graduated 2004
Rebecca Brady – Dr. Mark Shirliff, Chair, University of Maryland
Leo Kenefic – Dr. Paul Keim, Chair
Becky Colman – Dr. Dave Wagner, Chair
David Greenberg – Dr. Paul Keim, Chair
Breanne Keller – Dr. Maribeth Watwood, Chair

Undergraduate Students:

- Rebecca McCoy - Montana State University
Michael Bonnema - Montana State University
Kimberly White - University of Missouri and Montana State University
Jeremy Mitchell - Montana State University
Magan Bledsoe - Northern Arizona University
Carey Willson - Northern Arizona University – **MARC Scholar**
Alyssa Jeffers - Northern Arizona University
LaTosha Lott - Northern Arizona University
Crystal Borham - Northern Arizona University
Adam Block - Northern Arizona University
Keehoon Lee - Northern Arizona University
John Naylor - Northern Arizona University
Ashley Piersall - Northern Arizona University
Mathias Kerr - Northern Arizona University – **MARC Scholar**
Connor Fitzgerald - Northern Arizona University

Curriculum vitae for Jeff G. Leid

Katie Toan -	Northern Arizona University
Shalamar Georgia -	Northern Arizona University
Jessica Bass -	Northern Arizona University
Melanie Torres -	Northern Arizona University – MARC Scholar
Chelsa Johnson -	Northern Arizona University
Kara Levinson -	Northern Arizona University
Breanna Berry -	Northern Arizona University
Ashley Teeling -	Northern Arizona University
Candice Selgado -	Northern Arizona University – MARC Scholar
Bethany Riggins -	Northern Arizona University – REU Scholar
Alexandra Iannone -	Northern Arizona University – Hooper's Scholar
Gabriel Moreno -	Northern Arizona University – MARC Scholar
Joe Fox -	Northern Arizona University
Hertha Woody -	Northern Arizona University – MARC Scholar
Emily Cope -	Northern Arizona University
Jon Sanchez -	Northern Arizona University – Yuma – REU Scholar
Chris Jenner	Northern Arizona University
Matt Cornelison -	Coconino High School – Attending U. of Arizona
Sarah Trafton -	Northern Arizona University
Blessing Okon -	Northern Arizona University – UMEB Scholar
Erika Keim -	Flagstaff High School – Attending U. of Arizona
Aran Groves -	Northern Arizona University – MARC Scholar
Michael Pass -	Northern Arizona University
Katie Foley -	Northern Arizona University

Many of these students have gone onto Medical School, Dental School, PA School, Nursing and Graduate School. I have highlighted those students who were either in minority programs or have been part of undergraduate research awards.

SOCIETY MEMBERSHIPS

American Society for Microbiology
American Association of Immunologists

CURRENT, PENDING and PAST SUPPORT

Current

- 2005-2010 Real-Time PCR Assays for the Direct Detection of Sepsis and CAP Pathogens, National Institutes of Health – UO1 – AI066581, \$7, 600, 000. Award is through TGen and NAU is a subcontract on the grant, I am the Principal Investigator at NAU (\$500,000)
- 2007-2008 Validation and testing of a novel lateral flow assay to detect biofilm infections, Northern Arizona University TRIF Development Grant, \$100,000, Principal Investigator
- 2007-2011 Discovery and testing of biofilm proteins as vaccines. National Institutes of Health, NIAID, R01, \$300,000 (NAU subcontract) Co-Principle Investigator

Pending

- 2006-2010 Staphylococcus aureus biofilms: in vitro and in vivo studies. National Institutes of Health, NIAID, R01. \$1,250,000, Co-Principle Investigator. Submitted July, 2007

Curriculum vitae for Jeff G. Leid

- 2006-2008 Biofilm-specific, genetically regulated host immunoavoidance. National Institutes of Health, NIH R15, \$150,000, Principle Investigator. Score of 156 – to be resubmitted Oct, 2007
- 2006-2011 Functional analysis of *Staphylococcus aureus* and *Candida albicans* polymicrobial biofilms. National Institutes of Health, NIDCR, R01. \$1,250,000. Co-Principle Investigator
- 2006-2008 Genomic analysis of pathogenic determinants in *B. pseudomallei* and *B. thailandensis* biofilms. Pacific Southwest RCE, \$200,000, Principle Investigator.
- 2007-2012 Mathematical modeling of silver compound activity against infectious disease microorganisms. National Science Foundation, \$300,080 (NAU subcontract), Co-Principle Investigator.
- 2007-2012 Defining microbial pathogenesis of biofilms in chronic rhinosinusitis National Institutes of Health, \$4,201,200, Principle Investigator
- 2008-2013 Therapeutics targeting the methylerythritol phosphate pathway for biodefense. National Institutes of Health, \$749,875 (NAU Subcontract), co-Principle Investigator

Past 4 years

- 2006-2007 Development of nanoparticle biofilm diagnostics, Northern Arizona University TRIF Development Grant, \$50,000, Principal Investigator
- 2004-2005 Determining the role of quorum sensing in polymicrobial biofilms. Northern Arizona University Proposition 301 mini-grant, \$20,000, Principle Investigator
- 2003-2004 Searching Biofilm Mutations for Potential Therapeutic Targets. Northern Arizona University, PROP 301 mini-grant. \$15,000. Principle Investigator
- 2003-2004 Determining the role of biofilm development in the human leukocyte response against infection. Northern Arizona University Intramural Grant Program. \$10,600. Principle Investigator.
- 2003-2004 Systemic Thread Based Adaption of an Electrical Engineering Curriculum. National Science Foundation. \$99,986. Co-investigator
- 2002-2003 Detection and Analysis of Johne's Disease in American Bison Herds. Turner Enterprises INC., \$45,000. Principle Investigator.
- 2002-2003 Genomic and Proteomic Evaluation of *Staphylococcus epidermidis* Biofilms. Genome Therapeutics. \$40,000. Co-Principle Investigator.
- 2002-2003 Identification of Vaccine Candidates for the Prevention of Biofilm-mediated *Staphylococcus aureus* Infections. Culpepper Foundation. \$25,000. Co-Principle Investigator.
- 2002-2003 Investigations of human leukocyte killing of bacterial biofilms. Center for Biofilm Engineering. \$11,000. Principle Investigator.
- 2002-2003 Analysis of *Staphylococcus aureus* biofilms through DNA microarrays and 2D gel electrophoresis. Montana Network for Biomedical Research Opportunities. \$25,000 Co-Principle Investigator.

TOTAL FUNDING SINCE ARRIVAL AT NAU (2003 – 1-August-2007): U\$7,830,586

PATENTS

Methods for stimulating human leukocytes to kill bacteria, yeast and fungi in biofilms that have formed in/on prosthetic devices, catheters, tissues and organs *in vivo*. Samuel C.

Silverstein, Yongmei Li, J. W. Costerton, Mark E. Shirtliff and **Jeff G. Leid**. PENDING 2006.

Protein Preservation Solution, Mark E. Shirtliff, **Jeff G. Leid** PENDING 2007.

Genetic detection of the community acquired pathogen *Streptococcus pneumoniae* and the sepsis-associated pathogen *Staphylococcus aureus*. Paul S. Keim, Elizabeth Dreibe, and **Jeff G. Leid**, PENDING, 2007.

Methods and devices for the detection of biofilm. **Jeff G. Leid**, Timothy L. Vail, Jennifer M. Kofonow, Mark E. Shirtliff and Rebecca A. Brady. PENDING 2007.

Methods and devices for the detection of *Staphylococcus aureus* biofilms. **Jeff G. Leid**, Timothy L. Vail, Jennifer M. Kofonow, Mark E. Shirtliff and Rebecca A. Brady. PENDING 2007

Functionalized paramagnetic nanoparticles for in vivo biofilm detection. **Jeff G. Leid**, Timothy L. Vail and Mark E. Shirtliff. PENDING 2007

Functionalized paramagnetic nanoparticles for in vivo biofilm treatment. **Jeff G. Leid**, Timothy L. Vail and Mark E. Shirtliff. PENDING 2007.

PUBLICATIONS

1. Lee, K., Costerton, J.W., Ravel, J., Auerbach, R.J., Wagner, D.M., Keim, P. and Leid, J.G. 2007. Phenotypic and functional characterization of *Bacillus anthracis* biofilms. *Microbiology*. 153:1693-1701.
2. Brady RA, Leid JG, Kofonow J, Costerton JW, and **Shirtliff ME**. Immunoglobulins to surface-associated biofilm immunogens provide a novel means of visualization of methicillin-resistant *Staphylococcus aureus* biofilms. *Appl Env Micro*. ePub – 24-August-2007.
3. Vadasz, P., Vadasz, A.S., **Leid, J.G.**, Dobbs, E., Andrade, A., Pouldel, R. "Monotonic Growth of Motile Microorganisms", Published in, Proceedings of the 2nd International Conference on Porous Media and its Applications in Science Engineering and Industry, Kauai, Hawaii, USA, 2007.
4. Muench A, Jacobsen SM, Fux C, Leid JG, Camper AK, Costerton JW, and **Shirtliff ME**. *Staphylococcus aureus* genes unique to clinical strains are more often up-regulated in biofilms compared to the genes of laboratory strains. *J Bact*. 2007. *In Press*
5. Brady R, Leid JG, Calhoun JH, and **Shirtliff ME**. Osteomyelitis. *FEMS Immun Med Micro*. 2007. – in press.
6. Leid JG, Costerton JW, Calhoun JH, and **Shirtliff ME**. Acute septic arthritis. *FEMS Immun Med Micro*. 2007. – in press.
7. Shirtliff M.E., **Leid JG**, Camper A.K. and Costerton, J.W. Antimicrobial agents and biofilm-mediated infections. *Curr Med Chem*. 2007. – in press.
8. Healy, DW, Hunsaker, D and **Leid, JG**. Biofilms with fungi in chronic rhinosinusitis. *Otolaryngology – Head and Neck Surgery*, 2007. in press.
9. McMains, KC, Shirtliff, ME, and **Leid, JG**. Analysis of Bacterial Biofilm Organisms Using PhyloChip microarray analysis and Denaturing High Performance Liquid Chromatography (DHPLC). *Otolaryngology – Head and Neck Surgery*, 2007, in press.

10. **Jeff G. Leid** and Matt A. Nymeyer. Innate immune responses to important, opportunistic bacterial biofilms. *Arch Immunol Ther Exp.* 2007 – in press.
11. Brady, RA, **Leid, JG**, Costerton, JW and Shirtliff, ME. 2006. Osteomyelitis: Clinical overview and mechanisms of infection persistence. *Clin. Micro. News.* 28:65-70.
12. Brady, RA, **Leid, JG**, Camper, AK, Costerton, JW and Shirtliff, ME. Identification of *Staphylococcus aureus* proteins recognized by the antibody-mediated immune response to a biofilm infection. 2006. *Infect. Immun.* 74: 3415-3426.
13. Sanderson, AR, **Leid, JG**, Hunsaker, D. Bacterial biofilms on the sinus mucosa of human subjects with chronic rhinosinusitis. 2006. *Laryngoscope* 116:1121-1126.
14. Vadasz, AS., Vadasz, P, **Leid, JG**, Andrade, A, Cope, E, Dobbs, E, Yong, CK and Zavodnyik, S. 2006. Monotonic Growth of Motile Microorganisms, Published in the *Proceedings of IMECE2006*.
15. Marion-Ferey, K, **Leid, J**, Bouvier, G, Pasmore, M, Husson, G and Vilagines, R. 2005. Endotoxin level measurement in hemodialysis biofilm using 'the Whole Blood Assay'. *Artificial Organs.* 29:475-481.
16. Flikkema, PG and **Leid, JG**. 2005. Bacterial Communities: A Microbiological Model for Swarm Intelligence. Published in the *Proceedings of the Institute of Electrical and Electronic Engineers Swarm Intelligence Symposium*.
17. **Leid, JG**, Wilson, CJ, Shirtliff, ME, Hassett, DJ, Parsek, MR and Jeffers, AK. The Exopolysaccharide Alginate Protects *Pseudomonas aeruginosa* Biofilm Bacteria from IFN- γ -mediated Macrophage Killing. *J. Immunol.* 2005, 171:5886-5894.
18. **Leid, J.G.** and Jutila, M.A. 2004. Impact of polyunsaturated fatty acids on cytoskeletal linkage of L-selectin. *Cell. Immunol.* 228:91-98.
19. **Leid, J.G.**, M.E. Shirtliff, J.W. Costerton and P. Stoodley (2002). Human leukocytes adhere to, penetrate, and respond to *Staphylococcus aureus* biofilms. *Infection and Immunity* **70(11)**:6339-6345.
20. **Leid, J.G.**, J.W. Costerton, M.E. Shirtliff, M. Gilmore and M. Engelbert (2002). Immunology of Staphylococcal biofilm infections in the eye: New tools to study biofilm endophthalmitis. *DNA and Cell Biology*, **21(5/6)**: 405-413.
21. **Leid, J.G.**, D. Hunter, and C.A. Speer (2002). Early diagnosis of Johne's disease in the American Bison by monoclonal antibodies directed against antigen 85. *Annals of the New York Academy of Science*, **969**:66-72.
22. **Leid, J.G.**, C.A. Speer, and M.A. Jutila (2002). Ultrastructural examination of cytoskeletal linkage of L-selectin and comparison of L-selectin cytoskeletal association to that of other human and bovine lymphocyte surface antigens. *Cellular Immunology* **215(2)**: 219-230.
23. **Leid, J.G.**, Steeber, D.A., Tedder, T.F., and Jutila, M.A. (2001). Antibody binding to a conformation-dependent epitope induces L-selectin linkage to the cytoskeleton. *Journal of Immunology*, 166, 4899-4907.
24. **Leid, J.G.**, Speer, C.A., and Jutila, M.A. (1998). Comparative ultrastructure and expression of L-selectin on bovine $\alpha\alpha$ and $\beta\beta$ T cells. *J. Leukocyte Biology*, 64, 104-107.

BOOK CHAPTERS

1. **Leid, JG**, Brady, RA, Shirtliff, ME. Innate immune response to implanted device infections. In. *Biofilms and Device-Related Infections*. Springer, New York, NY. ed. Shirtliff ME and Leid JG. 2007. - in press.
2. Brady, RA, **Leid, JG**, Calhoun, JH and Shirtliff, ME. Infections of orthopaedic implants and devices. In. *Biofilms and Device-Related Infections*. Springer, New York, NY. ed. Shirtliff ME and Leid JG. 2007. - in press.

3. **Leid JG**, Costerton, JW, Jeffers, AK, Monroy, FP and Shirtliff ME. Recent advances in the diagnosis and treatment of acute septic arthritis. 2007. In: Progress in Arthritis Research. ed. Columbus F. Novel Science Publishers Inc. New York, NY. – in press.
4. Shirtliff, M.E., **Leid, J.G.**, and Costerton, J.W. (2003). Basic science of musculoskeletal infections. In: Musculoskeletal Infections. ed. Mader J.T. and Calhoun, J.H.. Marcel Dekker, Inc., New York, NY 1-61.

TEXTBOOKS

Shirtliff, ME and **Leid, JG**, Editors. Biofilms and Device-Related Infections. Springer, New York, NY 2007. – in press.

Submitted and In Preparation

25. Jennifer Kofonow, Rebecca A. Brady, Timothy L. Vail, Mark E. Shirtliff and **Jeff G. Leid** (2007). Development of a lateral flow assay for the detection of biofilm-specific antibodies in rabbits with chronic osteomyelitis, *submitted*.
26. Aviles, H., Stiles, J., Sonnenfeld, G., Leid, J. and F. Monroy. 2007. Kinetics of intracerebral chemokine expression during *Toxoplasma gondii* infection, *submitted*.
27. **Jeff G. Leid**, Douglas N. Barker, Ricky L. Ulrich, J. William Costerton, Fernando P. Monroy. Insights into the Putative Role of Biofilm Pathogenesis in Chronic *Burkholderia pseudomallei* Infection: Proposing a New Model of Chronic Melioidosis. 2007, *submitted*.
28. Gabriel Moreno, Douglas N. Barker, Ricky Ulrich, Bethany Riggins, Matt Cornelison, and **Jeff G. Leid**. Quorum-sensing and biofilm development in *Burkholderia pseudomallei* and *Burkholderia thailandensis*. 2007, submitted to *Journal of Bacteriology*.
29. **Jeff G. Leid**, Carey Willson, Alyssa Jeffers, Chelsa Johnson, Mathias Kerr, Candice Selgado, Thienny Mah, George A. O'Toole and Emily Cope. Genetic components of *Pseudomonas aeruginosa* biofilms correlate with human leukocyte killing efficiency. 2007, submitted.
30. Shirtliff ME, Gerth B, Chalmers N, Maxeiner H, Camper AK, Stoodley P, Costerton JW, and **Leid JG**. (2007). Gene expression and proteomic profiles in *Staphylococcus aureus* populations detached from biofilms. In preparation.
31. **Jeff G. Leid**, Jacques Ravel, Raymond Auerbach, Paul S. Keim, and Keehoon Lee (2007). Global gene and protein analysis of *Bacillus anthracis* biofilms. In preparation.
32. Muench A, Brady RA, Costerton JW, Camper AK, Stoodley P, **Leid JG** and Shirtliff ME. Gene expression profiles in *Staphylococcus aureus* populations detached from biofilms. *Molecular Microbiology*. In preparation