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Education

The University of Utah, Salt Lake City, Utah 1997- 2003
Ph.D. Bioengineering
Dissertation: “Glycosaminoglycan Hydrogels for Wound Healing”
Advisor: Glenn D. Prestwich, Ph.D.

University of Michigan, Ann Arbor, Michigan 1993 - 1997
B.S.E Materials Science and Engineering (*magna cum laude*)

Research and Professional Experience

Assistant Research Professor 2015 - present
Center for Biofilm Engineering, Montana State University, Bozeman, Montana

Research Scientist 2006 - 2014
Center for Biofilm Engineering, Montana State University, Bozeman, Montana

Senior Manager Scientist I 2005 - 2006
Bacterin International Inc., Belgrade, Montana

Research Scientist 2004 - 2005
Organ Recovery Systems, Charleston, South Carolina

Graduate Research Assistant 1997 - 2003
The University of Utah, Salt Lake City, Utah

Research Assistant 1996 - 1997
University of Michigan, Veterans Administration Hospital, Ann Arbor, Michigan

Publications

M.C. Ammons, B.P. Tripet, R.P. Carlson, K.R. Kirker, M.A. Gross, J.J. Stanisich, V. Copié, “Quantitative NMR Metabolite Profiling of Methicillin-Resistant and Methicillin-Susceptible *Staphylococcus aureus* Discriminates between Biofilm and Planktonic Phenotypes” *J Proteome Res* 13(6):2973-85 (2014).

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- Y. Luo, K.R. Kirker, and G.D. Prestwich, "Hyaluronic Acid Hydrogel Film: A New Biomaterial for Drug Delivery and Wound Healing," *HA 2000*, Woodhead Publishing Ltd., Abington, UK (2000).

Patents

- N.J. Shelby, S.M. Scott, B.P. Luchsinger, G.A. Juda, K.R. Kirker, J. Hernandez, D.L. Holmes. "Process for Demineralization of Bone Matrix with Preservation of Natural Growth Factors." (2013). US Patent No. 8,574,825.
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Grants

National Institute of Arthritis and Musculoskeletal and Skin Diseases 2012 - 2015
1R03AR060995-01A1
Title: *Staphylococcus aureus* Biofilms Mediate Keratinocyte Apoptosis
Role: Co-Principal Investigator

Poster/Invited Speaker

P. Secor, K.R. Kirker, G.A. James, P. Fleckman, J. Olerud, and P.S. Stewart, “The Impact of *S. aureus* Biofilm on Human Keratinocytes.” (Poster) American Society for Microbiology Biofilms Conference, Cancun, Mexico (2009).

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S. Nielsen-Preiss, J. Gillette, K.R. Kirker, Annexin A2 and Lipid Microdomains Regulate Matrix Vesicle-associated ALP Activity Required for Osteoblastic Mineralization.” (Poster) American Society for Cell Biology, San Francisco, CA (2008).

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“*Staphylococcus aureus* Biofilms Prevent Scratch Wound Closure *In Vitro*.” (Poster)
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K. Fitzpatrick, Y-I. Yang, K.R. Kirker, M. Massey, and J. Shelby. “Extracellular Matrix Molecules Enhance Allograft Skin Viability.” (Poster) Society for Biomaterials Annual Meeting, Pittsburg, PA (2006).

Y-I. Yang, K.R. Kirker, M. Massey, and J. Shelby. “Adult-Derived Adipose Stem Cells for Bone Regeneration.” (Poster) Society for Biomaterials Annual Meeting, Pittsburg, PA (2006).

K.R. Kirker. “The Use of Adult-Derived Adipose Stem Cells for Bone Regeneration.” (Invited Speaker) BioInterface 2005, Minneapolis, MN (2005).

I. Erickson, Y-I. Yang, K. Fitzpatrick, K.R. Kirker, M. Massey, and J. Shelby. “Improved Viability of Adipose-Derived Adult Stem Cells After Cryopreservation Using Hyaluronan as a Media Supplement.” (Poster) BioInterface, Minneapolis, MN (2005).

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Journal Peer Reviewer

Biofouling

Bioorganic & Medicinal Chemistry Letters

International Journal of Molecular Sciences

International Scholarly Research Notices

Journal of Applied Polymer Science

Journal of Diabetes Research

Journal of Pathogens

Journal of Wound Care

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