

CURRICULUM VITAE

Laura Clarke Bridgewater, Ph.D.

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EDUCATION

The George Washington University, Washington, D.C., 1989-1995
Ph.D. in Genetics, 1995
Academic Emphases: Molecular Biology, Gene Regulation, Developmental Biology
Brigham Young University, Provo, Utah, 1985-1989
B.S. in Microbiology, 1989

EMPLOYMENT HISTORY

2016-present: Professor, Dept. of Microbiology & Molecular Biology, BYU
2014-2015: Visiting Researcher, School of Life Science and Biotechnology, Shanghai Jiao Tong University, Shanghai, China working with Liping Zhao, Ph.D.
2005-2016: Associate Professor, Dept. of Microbiology and Molecular Biology, BYU
2001-2005: Assistant Professor, Dept. of Microbiology & Molecular Biology, BYU
1999-2001: Assistant Professor, Dept. of Zoology, BYU
1996-1999: Postdoctoral Fellow, Dept. of Molecular Genetics, M.D. Anderson Cancer Center, Houston, Texas, P.I.: Benoit de Crombrughe, M.D.
1995-1996: Postdoctoral Fellow, Human Genetics Center, University of Texas Health Science Center at Houston, P.I.: Craig L. Hanis, Ph.D.
1990-1995: Graduate Research Assistant, Dept. of Pharmacology, The George Washington University Medical Center, Advisor: Steven R. Patierno, Ph.D.
1988, January-March: Intern, NICHD, National Institutes of Health, Advisor: William A. Gahl, M.D./Ph.D.
1987-1989: Research Assistant, Department of Zoology, Brigham Young University, Advisor: Robert E. Seegmiller, Ph.D.

UNIVERSITY CITIZENSHIP AND SERVICE

2016-present: Associate Dean, BYU College of Life Sciences
2015-2016: Member, Search Committee for BYU Dean of Undergraduate Education
2011-2014: Department Chair, BYU Department of Microbiology and Molecular Biology
2010-present: Faculty Advisor, BYU Women in Science Club
2010-2011: Vice-Chair, Brigham Young University Athletic Advisory Council
2009-2010: Chair of Academic Sub-Committee, BYU Athletic Advisory Council
2009-2011: Member, BYU Honors Program Faculty Council
2008-2011: Member, Brigham Young University Athletic Advisory Council
2008-2011: Chair, Orientation Sub-Committee, BYU Employee Giving Committee
2008-2011: Member, Department Faculty Development Committee
2008-2009: Member, BYU Women's Research Institute Grant Review Committee

2007-2008: Member, College of Life Sciences Graduate Committee
 2005-2006: Organizer, Seminar for Undergraduate Women in Math, Science, and Engineering
 2002-2006: Chair, Department of Microbiology and Molecular Biology Graduate Committee
 2004-2005: Member, Search Committee for Dean of College of Biology and Agriculture
 2004-2005: Member, BYU Pre-Medical Committee
 2004-2004: Member, Search Committee for Director of BYU DNA Sequencing Center
 2003-2004: Chair, Department Curriculum Committee for Life Science Core Courses
 2003-2003: Member, Design Committee for BYU Rodent Facility Renovation
 2000-2001: Member, Search Committee for Physiology Faculty Position
 1999-1999: Member, BYU Molecular Biology Committee
 1998-1999: Board of Directors, Texas Society for Biomedical Research

EXTERNAL CITIZENSHIP AND SERVICE

GRANT REVIEW COMMITTEES

Mar 2017 Department of Veterans Affairs, Rehabilitation Research and Development Service, Regenerative Medicine Panel
 Oct 2016 NIH Musculoskeletal, Oral, and Skin Sciences (MOSS) Integrated Review Group
 Aug 2016 Department of Veterans Affairs, Rehabilitation Research and Development Service, Regenerative Medicine Panel
 Feb 2016 Department of Veterans Affairs, Rehabilitation Research and Development Service, Regenerative Medicine Panel
 Oct 2011 NIH Skeletal Biology Structure & Regeneration Study Section, Musculoskeletal, Oral, and Skin Sciences Integrated Review Group
 Aug 2011 NSF Physiological & Structural Systems Cluster Proposal Review Panel of Symbiosis Defense and Self-Recognition
 Sept 2010 NIH Skeletal Biology Structure and Regeneration Study Section, Musculoskeletal, Oral, and Skin Sciences Integrated Review Group
 Jan 2010 NIH Skeletal Biology Structure and Regeneration Study Section, Musculoskeletal, Oral, & Skin Sciences Integrated Review Group Special Emphasis Panel
 May 2009 NIH Musculoskeletal, Oral, & Skin Sciences, Challenge Grants in Health and Science Research Review Group
 Feb 2007 NIH Skeletal Biology Structure & Regeneration Study Section, Musculoskeletal, Oral, and Skin Sciences Integrated Review Group
 Jun 2006 NIH Skeletal Biology Structure & Regeneration Scientific Review Group
 Apr 2006 External reviewer, NSF single grant
 Mar 2006 National Institute for Arthritis and Musculoskeletal and Skin Diseases, Centers of Research Translation Special Review Group
 May 2005 External reviewer, NSF single grant

REVIEWER FOR THE FOLLOWING JOURNALS

Journal of Biological Chemistry	Molecular and Cellular Biology
PLoS ONE	Arthritis and Rheumatism
BioMed Research International	Molecular and Cellular Biochemistry

Experimental Cell Research
Biochimica et Biophysica Acta
Nucleic Acids Research
Molecular Biology of the Cell
Int'l Journal of Biochemistry and Cell Biology
Journal of Bone and Mineral Research

Osteoarthritis and Cartilage
International Journal of Cancer
Journal of Orthopaedic Research
Genomics
Matrix Biology
Journal of Cancer

PROFESSIONAL SOCIETIES

International Society for Microbial Ecology
Society for Developmental Biology
American Society for Matrix Biology, Charter Member
American Association for Cancer Research
American Association for the Advancement of Science
American Society for Biochemistry and Molecular Biology
Osteoarthritis Research Society International

MEETINGS ORGANIZED

LDS Life Science Research Symposium, July 2016, Thanksgiving Point, Utah

TEACHING ASSIGNMENTS (since 2005)

MMBIO 240 (Molecular Biology)

Fall 2017, 453 students
Fall 2016, 395 students
Winter 2016, 547 students
Summer 2014, 7 students (offered in Shanghai with Study Abroad program)
Fall 2013, 216 students
Fall 2012, 194 students
Fall 2011, 94 students
Winter 2011, 252 students
Winter 2010, 178 students
Winter 2009, 247 students
Winter 2008, 252 students
Fall 2007, 115 students
Winter 2007, 196 students
Fall 2006, 140 students
Winter 2006, 261 students
Fall 2005, 205 students
Winter 2005, 91 students

IAS 201R (China Study Abroad Preparatory course)

Winter 2014, 13 students

MMBIO 390R (Readings in Molecular Biology)

Winter 2014, 18 students
Fall 2009, 13 students

Fall 2008, 15 students

LFSCI 399R (Academic Internship, with China Study Abroad program)

Summer 2014, 13 students

MMBIO 557 (Genes and Cancer)

Winter 2011, 13 students

Winter 2009, 15 students

Winter 2007, 16 students

Winter 2005, 5 students

MMBIO 551R (Microbial Ecology, with China Study Abroad program)

Summer 2014, 5 students

MMBIO 551R (Current Topics in Molecular Biology)

Summer 2012, 6 students

MMBIO 551R (Gene Expression)

Winter 2006, 5 students

MMBIO 490R/691R (Molecular Biology Seminar)

Fall 2008, 14 students

Winter 2008, 13 students

MMBIO 661 (Molecular Biology of the Cell--graduate level)

Fall 2013, 24 students

Fall 2012, 14 students

Fall 2011, 21 students

Fall 2010, 17 students

Fall 2009, 14 students

MMBIO 662 (Genomics, Molecular Evolution, and Developmental Biology—graduate level)

Winter 2014, 26 students

Winter 2013, 14 students

Winter 2012, 20 students

Winter 2011, 15 students

Winter 2010, 17 students

STUDENT TRAINEES (TOTAL NUMBERS)

3 Ph.D. students

12 M.S. students

12 Honors students

148 Undergraduate students

4 High school students

GRADUATE STUDENT TRAINEES

Claudia Tellez Freitas	Ph.D. Student	2015-present
Trina Loos	Ph.D. Student	2006-2010
Jaime Mayo	Ph.D. Student	2004-2007
Jeralyn Franson	M.S. Student	2015-present
Brandt Nichols	M.S. Student	2011-2013
Daniel Olsen	M.S. Student	2011-2013
Fialka Grigorova	M.S. Student	2009-2011
Mary Ann Genzer	M.S. Student	2004-2006
Laura Harris	M.S. Student	2002-2003
Elizabeth Jenkins	M.S. Student	2001-2004
Jenny Moss	M.S. Student	2001-2003
Dana Murphy	M.S. Student	2000-2002
Gwen Miller	M.S. Student	2000-2001
Marlan Walker	M.S. Student	2000-2001
James Ricks	M.S. Student	1999-2000

HONORS STUDENT TRAINEES

Caitlin Nichols	Honors Student	2008-2013
Michael Baldwin	Honors Student	2007-2011
Evan Davis	Honors Student	2007-2009
Daniel Jensen	Honors Student	2005-2007
Mark Tait	Honors Student	2004-2006
David Timme	Honors Student	2004-2006
Rudy Rodriguez	Honors Student	2000-2003
Todd Jackson	Honors Student	2000-2002
K. Nicole DeWitt	Honors Student	2000-2001
Vicki Winkel	Honors Student	2000
Reuben Chen	Honors Student	1999-2002
Trevor Ellison	Honors Student	1999-2001

UNDERGRADUATE STUDENT TRAINEES

Spencer Nakamoto (2018-present)	Darla Miles (2015-2016) *	Logan Harmon (2013-2014)
Casey Straus (2018-present)	Kaitlyn Williams (2015-2016)	Zach Pinter (2013-2014)
Eric Kim (2017-present)	Rachel Sevey (2015-2016) ‡	Jake Holland (2013-2014) ‡
Riley Driscoll (2016-present) ‡	Austin Brockbank (2015-2016)	Julianna Thong (2013)
Jason Hoggard (2017-present)	Conrad Stallings (2015- 2016) *	Megan Whitt (2012-2014) *
Francis Payne (2017-present) ‡	Peter Young (2015) *	Wes Goar (2012-2014) ‡*
Jeffery Zhao (2015-present) †	Joe White (2015-2016) †††	Loyd Christensen (2012-2014) * ††
Haley Burrell (2015-present)	Alistair Hilton (2015-2016) ‡ ‡	Tyson Bailey, (2012-2013) ‡*
Blake Tibbitts (2017)	Andrew Rees (2013-2016) ††	Wayne Simmons (2012-2013)
McKenzie Hatcher (2017) ‡	Josh Yates (2012-2015) †*	Brianna Conley (2012-2013)
Jacob Amini (2016-2017)	Steven Pruitt (2013-2014)	Alecia Brighton (2012)
Chris Read (2016-2017)	Chris Guynn (2013-2014)	Ryan Mann (2011-2013)
Alexis Conley (2016-2017)	Nicole Barney (2013-2014)	Brian Earley (2011-2013)
Mark Peterson (2016-2017)	Rob Driggs (2013-2014)	Dylan Randall (2011-2013)
Jared Resolme (2015–2016)	Spencer Dean (2013-2014) *	Taylor Williams (2011-2012) ‡*

Tyson Skeen (2011-2012)	Rich Davis (2006-2007) ‡	Eric Freeman (2001-2003) ‡
Jillian Carr (2011-2012) ‡*	Alicia Yost (2006)	David Sontag (2001-2003)
Saroj Dhungel (2011-2012) *	Nathan Hicks (2005-2007)	Brandon Bomsta (2001-2003) *
Kevin Steed (2011-2012) *	Daniel Jensen (2005-2007) †‡*	Mike Layton (2001-2003)
Matt Rees (2010-2012) ‡*	Brian Ellertson (2005-2007) †	Rudy Rodriguez (2000-2003) †‡*
Aubrey Rogers (2010-2012) †‡*	Tassanee Soward (2005-2006)	Daniel Holsinger (1999-2003) *
Ben Fisher (2010-2011)	Will Witwer (2005-2006)	Whitni Babcock (2001-2002) †‡
Lindsie Martin (2010-2011)	David Timme (2004-2006) ‡	Brad Crosby (2001-2002) †‡
Jason Cooper (2010-2011)	Jordan Olsen (2004-2006) ‡	Sam Vaughn (2001-2002) †‡
Brandalyn Chidsey (2009-2011) ‡*	Cindy Niederhauser (2004-2006) †‡*	Steve Crump (2001-2002)
Jacob Barney (2009-2011)	Mark Tait (2004-2006) ‡	Mark Rogers (2001-2002)
Jordan Richardson (2009-2010)	Clark Rogers (2004-2005) †	Brian Miller (2001-2002)
Jayson Wutzbach (2009-2010)	Ben Kuntz (2004-2005) †	Alisha Facer (2001-2002)
Nick Wallace (2009-2010) ‡	Chikage Kubo (2004-2005) †	Jason Dalling (2001-2002)
Julia Ventura (2009-2010) ‡*	Shaunae Martin (2004-2005)	Jared Armstrong (2001-2002)
Wayna Chow (2009-2010)	Amanda Troxel (2004-2005)	Steve Smith (2000-2002) †‡
Christopher Fox (2009) ‡*	Tyler Haberle (2004-2005) †	Todd Jackson (2000-2002) †‡*
Natalie Manwaring (2009)	Steve DeWidt (2004-2005) ‡	Laura D. Harris (2000-2002) †‡*
Suzanna Logan (2009)	Bobby Palmer (2004-2005)	Kit Bennion (1999-2002) †‡
Derek Hill (2008-2010)	Dave Rowley (2004-2005)	Victoria Ryder (1999-2002) ‡
Caitlyn Nichols (2008-2010) ‡*	Carolina Montano (2003-2005) ‡*	Reuben Chen (1999-2001) ‡*
Michael Adam (2008-2010) †*	Chuck Meeker (2003-2004)	Trevor Ellison (1999-2001) ‡*
Ryan Cordner (2008-2010) †‡*	Jennifer Chiniquiy (2003-2004)	Eric Jenkins (2000-2001)
Sampath Loganathan (2008-2009) ‡*	Mary Ann Genzer (2003-2004)	Hao Vu (1999-2001) ‡
Kriti Shrestha (2008-2009)	Scott Richins (2003-2004)‡	Nicole Dewitt (2001)
Alina Schmidt (2007-2009) †‡*	Kyle Bullock (2003-2004)	Heather Taylor (2000-2001) ‡
Evan Davis (2007-2009) †	Chad Christensen (2003-2004)	Jennifer Sampson (2000) ‡
Broc McCune (2007-2010) ††	Bryan Mason (2003-2004) ‡	Vicki Winkel (2000) ‡*
Borel Fonhoue (2007-2009) ‡	Nick Orme (2002-2004) †‡	Dana Murphy (1999-2000) †
Devin Holden (2007-2009) †*	Chris Meinhart (2001-2004) ‡*	James Clarke (1999-2000) *
Michael Baldwin (2007-2011) †	Jaron Coombs (2002-2003)	Jenny Potter (1999-2000) †‡**
Stephanie Gaufin (2007-2009) *	Justin Hunt (2002-2003)	Ann Hillam (1999-2000) ‡
Sam Wilkinson (2007-2008) ‡	Marianne Morris (2002-2003)	Thomas Carmack (1999-2000) ‡
Jonathan Hansen (2006-2008) †‡	Daniel Watson (2002-2003)	
Daniel Sperry (2006-2007) ‡*	Kimberly Wilbur (2002-2003)	

* Undergraduate students who have authored a peer-reviewed research publication

† Undergraduate students who have been the first author and presenter of a poster at a scientific meeting

‡ Undergraduate students who have been a non-presenting author on a poster

HIGH SCHOOL STUDENT TRAINEES

Sia Im, Timpview High School (fall 2012)

Michael Perry, Timpview High School (summer 2012)

Andrew Brewer, Karl G. Maeser Preparatory Academy (summer 2011)

Hannah Leavitt, Karl G. Maeser Preparatory Academy (summer 2011)

HONORS AND AWARDS

Featured Speaker, 26th Annual Russell B. Clark Gerontology Conference, 2016

Utah Valley University College of Science and Health Symposium Series speaker, 2012

Brigham Young University Forum Speaker, 2010

Scholarship Award, BYU Faculty Women's Association, 2009

College Outstanding Mentor Award, BYU College of Life Sciences, 2008

College Creative Achievement Award, BYU College of Biology and Agriculture, 2006
 Alice Louise Reynolds Lecturer, BYU, 2006
 BYU Young Scholar Award, for outstanding promise and contributions by faculty in the early stages of their academic careers, 2004
 Damon Runyon-Walter Winchell Foundation, Postdoctoral Fellowship Award, 1997-1999
 Cum Laude graduation from the George Washington University doctoral program, 1995
 Phi Delta Gamma Scholarship for graduate study, George Washington University Chapter, 1993-1994
 The George Washington University Presidential Merit Fellowship for Graduate Study, 1989-1992
 Magna Cum Laude Graduation from BYU, 1989
 BYU Trustees Scholarship, full tuition, 1985-1989

INVITED TALKS

Dec. 2017 Gut-Brain Axis Summit, Expert Speaker, San Francisco, CA
 Mar. 2017 BYU Career Engagement Conference, Invited Speaker
 Oct. 2016 BYU Department of Nutrition, Dietetics, and Food Science seminar speaker
 Mar. 2016 Research Presentation, 26th Annual Russell B. Clark Gerontology Conference
 Sept. 2015 Keynote Speaker at BYU-wide New Graduate Student Dinner
 Jun. 2013 BYU Cancer Research Center Summer Symposium, Provo, UT
 Sept. 2012 Utah Valley University College of Science and Health Symposium Series speaker, Orem, UT
 Jun. 2012 BYU Cancer Research Center Summer Workshop, Provo, UT
 Apr. 2012 Utah Valley University Inauguration of the Richard G. Scott Science Scholarship, Orem, UT
 Oct. 2010 Utah State University Department of Biology Seminar, Logan, UT
 Oct. 2010 BYU Alumni Board Annual Meeting, Brigham Young University, Provo, UT
 Jul. 2010 Brigham Young University Forum Address, Provo, UT
 Feb. 2009 Molecular Biology Seminar, Brigham Young University, Provo, UT
 Aug. 2007 LDS Life Science Research Symposium, Snowbird, Utah
 Nov. 2006 American Society for Matrix Biology Biannual Meeting, Nashville, Tennessee
 Oct. 2006 Alice Louise Reynolds Women-In-Scholarship Lecture, Brigham Young University, Provo, UT
 Sept. 2005 Brigham Young University, Statistics Dept. Seminar, Provo, UT
 Mar. 2003 BYU DNA Sequencing Center Staff Seminar, Provo, Utah
 Sept. 2002 Provo Kiwanis Club, Provo, Utah
 Sept. 2002 Women In Science Career Options Seminar, Provo, Utah
 Oct. 2001 Molecular Biology Seminar Series, BYU, Provo, Utah
 Oct. 2000 Brigham Young University Annual High School Science Day, Provo, Utah
 July 2000 Brigham Young University Summer Science Camp, Provo, Utah
 June 2000 Symposium of the International Society for Matrix Biology, Philadelphia, Pennsylvania
 Oct. 1999 Women in Medicine Symposium Series, BYU, Provo, Utah
 Nov. 1998 Conference for the Advancement of Science Teachers, Corpus Christi, Texas

Oct. 1998	American Society for Biochemistry and Molecular Biology Fall Symposium, Regulation of Bone Formation, Taos, New Mexico
May 1998	International Science and Engineering Fair, Fort Worth, Texas
Apr. 1998	Department of Zoology, Brigham Young University, Provo, Utah
Mar. 1996	University of Texas Health Science Center at Houston, Graduate School of Biomedical Sciences, Houston, Texas
Nov. 1995	University of Texas Health Science Center at Houston, Graduate School of Biomedical Sciences, Houston, Texas
Jan. 1995	Howard Hughes Medical Institute, University of Utah, Salt Lake City, Utah
Jan. 1995	Department of Zoology, Brigham Young University, Provo, Utah

RESEARCH GRANTS (\$2.4 million total)

“A phage-based treatment for inflammation and obesity”

Principle Investigator: Laura Clarke Bridgewater

Funding Source: BYU College of Life Sciences Technology Transfer Fund, 2017
\$15,000

“Integrating microbiome analysis into Immunology, Molecular Biology, and Genomics courses to improve student learning”

Co-Principal Investigators: Scott Weber, Laura Bridgewater, Brent Nielsen, and Steve Johnson

Funding Source: BYU College of Life Sciences Teaching Enhancement Grant, 2016
\$8,700

“Diet, gut microbiome, and mental health interactions”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2015-16
\$20,000

“Examining the relative contributions of genes, diet, and the gut microbiome to the development of obesity and diabetes”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2014-15
\$20,000

“Obesity, diabetes, and aging: Contributions of the gut microbiome”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU Gerontology Program, 2014
\$10,000

“Validation of an nBmp2 mutant mouse model”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2013-14
\$20,000

“Transcriptional activity of the novel nuclear protein nBmp2”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2012-13

\$20,000

“Common mechanisms of osteoarthritis in three mouse models”

Principal Investigator: Robert E. Seegmiller; Co-Investigator: Laura Clarke Bridgewater

Funding source: NIAMS/NIH, grant #R15 AR056861, 2009-2011

\$225,000

“A novel nuclear variant of Bmp2: Role in Ca²⁺ transport”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2011-13

\$20,000

“The role of nuclear Bmp2 (nBmp2) in skeletal muscle”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2010-12

\$20,000

“The unfolded protein stress response in chondrodysplasia and osteoarthritis”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2009

\$20,000

“Nuclear function of BMP family proteins”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2008

\$20,000

“MRI: Acquisition of DNA-manipulation robotics for increased throughput and data integrity in biological research, teaching, and student research training”

Principal Investigator: Leigh Johnson, Co-PI: Laura Clarke Bridgewater and three others

Funding Source: NSF, DBI-0520978, 2005-2008

\$337,502

“Chondrocyte-specific transcriptional regulation”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: NIAMS/NIH, grant #RO1 AR 48839, 2002-2008

\$925,000

“Nuclear localization of GDF-5”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2007

\$20,000

“Chondrocyte-specific enhancer elements”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: Ira and Mary Lou Fulton Family Foundation, 2001-2010

\$200,000

“Pathogenesis of osteoarthritis in *Col2a1* mutant mice”

Co-Principal Investigators: Laura Clarke Bridgewater and Robert E. Seegmiller

Funding Source: NIAMS/NIH, grant #R15 AR47568, 2002-2004

\$146,000

“Transgene rescue of chondrodysplasia and osteoarthritis”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: NIAMS/NIH, grant #RO3 AR 46362, 1999-2002

\$222,000

“Research Supplement for Underrepresented Minorities”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: NIAMS/NIH, supplement to grant #1 RO3 AR 46362, 2000-2002

\$47,820

“Establishing the foundation for treatment of cartilage collagen disorders by gene therapy”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: BYU ORCA, Environments for Mentoring Grants Program, 2001

\$22,700

“Characterization of the role of SOX9 in cartilage differentiation”

Principal Investigator: Laura Clarke Bridgewater

Funding Source: The Damon Runyon Cancer Research Foundation, grant #DRG1464

1997-1999

\$98,500

PUBLICATIONS

1. **Bridgewater, L.C.**, Zhang, C., Wu, Y., Zhang, Q., Hu, W., Wang, J., Li, S., Zhao, L. “Gender-based differences in host behavior and gut microbiota composition in response to high fat diet and stress in a mouse model.” *Scientific Reports* 7:10776 DOI:10.1038/s41598-017-11069-4 <http://rdcu.be/vXH4> (2017).
2. Cordner, R.D., Friend, L.N., Mayo, J.L., Badgley, C., Wallmann, A., Stallings, C., Young, P., Miles, D., Edwards, J.G., & **Bridgewater, L.C.** “The BMP2 nuclear variant, nBMP2, is expressed in mouse hippocampus and impacts memory.” *Scientific Reports* 7:46464 DOI: 10.1038/srep46464 <http://rdcu.be/rpTv> (2017).
3. Rose, B.J., Seegmiller, R.E., **Bridgewater, L.C.**, Kooyman, D.L. “Collagen mutant mouse models provide an important tool to study osteoarthritis.” *Journal of Arthritis* 5(5): 1000213 DOI: 10.4172/2167-7921.1000213 <https://www.omicsonline.org/open-access/collagen-mutant->

[mouse-models-provide-an-important-tool-to-studyosteoarthritis-2167-7921-1000213.php?aid=77214](http://dx.doi.org/10.1115/1.4033546) (2016).

4. Beatty, A., Bowden, A.E., **Bridgewater, L.C.** “Functional validation of a complex loading whole spinal segment bioreactor design.” *Journal of Biomechanical Engineering* 138(6):064501 doi: 10.1115/1.4033546 <http://dx.doi.org/10.1115/1.4033546> <http://biomechanical.asmedigitalcollection.asme.org/article.aspx?articleID=2521877> (2016).
5. Long, W., Xue, Z., Zhang, Q., Feng, Z., **Bridgewater, L.C.**, Wang, L., Zhao, L., Pang, X. “Differential responses of gut microbiota to the same prebiotic formula in oligotrophic and eutrophic batch fermentation systems.” *Scientific Reports* 5:13469 doi: 10.1038/srep13469 <http://www.nature.com/articles/srep13469> (2015).
6. Olsen, D.S., Goar, W.A., Nichols, B.A., Bailey, K.T., Christensen, S. L., Merriam, K.R., Reynolds, P.R., Wilson, E., Weber, K.S., **Bridgewater, L.C.** “Targeted mutation of nuclear bone morphogenetic protein 2 (nBMP2) impairs secondary immune response in a mouse model.” *BioMed Research International* vol. 2015, Article ID 975789, doi:10.1155/2015/975789 <http://www.hindawi.com/journals/bmri/2015/975789/> (2015).
7. Zhang, C., Yin, A., Li, H., Wang, R., Wu, G., Shen, J., Zhang, M., Wang, L., Hou, Y., Ouyang, H., Zhang, Y., Zheng, Y., Wang, J., Lv, X., Wang, Y., Zhang, F., Zeng, B., Li, W., Yan, F., Zhao, Y., Pang, X., Zhang, X., Fu, H., Chen, F., Zhao, N., Hamaker, B.R., **Bridgewater, L.C.**, Weinkove, D., Clement, K., Dore, J., Holmes, E., Xiao, H., Zhao, G., Yang, S., Bork, P., Nicholson, J.K., Wei, H., Tang, H., Zhang, X., Zhao, L. “Dietary modulation of gut microbiota contributes to alleviation of both genetic and simple obesity in children.” *EBioMedicine* 2:966-982. <http://dx.doi.org/10.1016/j.ebiom.2015.07.007> (2015).
8. Stolworthy, D.K., Bowden, A.E., Roeder, B.L., Robinson, T.F., Holland, J.G., Christensen, S.L., Beatty, A.M., **Bridgewater, L.C.**, Eggett, D.L., Wendel, J.D., Stieger-Vanegas, S. “MRI evaluation of spontaneous intervertebral disc degeneration in the alpaca cervical spine.” *Journal of Orthopaedic Research* <http://onlinelibrary.wiley.com/doi/10.1002/jor.22968/full> (2015).
9. Xue, Z., Zhang, W., Wang, L., Hou, R., Zhang, M., Fei, L., Zhang, X., Huang, H., **Bridgewater, L.**, Jiang, Y., Jiang, C., Zhao, L., Pang, X., and Zhang, Z. “The bamboo-eating giant panda harbors a carnivore-like gut microbiota, with excessive seasonal variations.” *mBio* 6:3, doi: 10.1128/mBio.00022-15 <http://mbio.asm.org/content/6/3/e00022-15.full> (2015).
10. Chen, H., Liu, Y., Zhang, M., Wang, G., Qi, Z., **Bridgewater, L.C.**, Zhao, L., Tang, Z, Pang, X. “A *Filifactor alocis*-centered co-occurrence group associates with periodontitis across different oral habitats.” *Scientific Reports* 5:9053, doi: 10.1038/srep09053 <http://www.nature.com/articles/srep09053> (2015).
11. Stolworthy, D.K., Fullwood, R.A., Merrell, T.M., **Bridgewater, L.C.**, & Bowden, A.E. “Biomechanical comparison of the camelid and human intervertebral disc.” *Journal of*

Orthopaedic Translation 3:34-43, <http://dx.doi.org/10.1016/j.jot.2014.12.001> (2014).

12. **Bridgewater, L.C.**, Mayo, J.L., Evanson, B.G., Whitt, M.E., Dean, S.A., Yates, J.D., Holden, D.N., Schmidt, A.D., Fox, C.L., Dhunghel, S., Steed, K.S., Adam, M.M., Nichols, C.A., Loganathan, S.K., Barrow, J.R., & Hancock, C.R. "A novel bone morphogenetic protein 2 mutant mouse, nBmp2NLStm, displays impaired intracellular Ca²⁺ handling in skeletal muscle." *BioMed Research International*. Volume 2013, article ID 125492 <http://dx.doi.org/10.1155/2013/125492> (2013).
13. Ricks, M.S., Farrell, J.T., Falk, D.J., Holt, D.W., Rees, M., Carr, J., Williams, T., Nichols, B.A., **Bridgewater, L.C.**, Reynolds, P.R., Kooyman, D.L., & Seegmiller, R.E. "Osteoarthritis in the temporomandibular joint of *Col2a1* mutant mice." *Archives of Oral Biology*. 58:1092-1099 <http://www.sciencedirect.com/science/article/pii/S0003996913000666> (2013).
14. Holt, D.W., Henderson, M.L., Stockdale, C.E., Farrell, J.T., Kooyman, D.L., **Bridgewater, L.C.**, & Seegmiller, R.E. "Osteoarthritis-like changes in the heterozygous *sedc* mouse associated with the HtrA1-Ddr2-Mmp-13 degradative pathway: a new model of osteoarthritis." *Osteoarthritis and Cartilage* 20:430-439 <http://www.sciencedirect.com/science/article/pii/S1063458411003207> (2012).
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ABSTRACTS/POSTER PRESENTATIONS

1. Monroe, J.A., Kwon, J., Bridgewater, L.C., Jensen, B.D., Bowden, A.E. “Carbon-Infiltrated Carbon Nanotube Coating of Titanium Stimulates Proliferation, Vitality, and Functionality of Human Osteoblasts.” Orthopaedic Research Society Annual Meeting. New Orleans, Louisiana (2018).
2. Cox, T.D., Freitas, C.M., Yorgason, J.T., Franson, J.J., Bridgewater, L.C., Steffensen, S.C., Weber, K.S. “CD5 deficient mice exhibit altered cognitive function in behavioral studies.” Autumn Immunology Conference, Chicago, Illinois (2017).
3. Ong, K.L., Rees, A., Franson, J., White, J., Hilton, A., Choksi, N., Pattison, J.A., Laub, S., Nickle, T., Harrison, M., Dallon, B., Bikman, B., Bridgewater, L.C., Grose, J.H. “PAS kinase deficient mice display increased rates of cellular respiration.” Keystone Mitochondria Communication, Taos, New Mexico (2017).
4. Zhao, J., Grossarth, S., Driscoll, R., Payne, F., Hatcher, M., Bridgewater, L.C. “Combating obesity through gut microbiome targeted phage therapy.” Life Sciences Undergraduate Research Poster Competition, 2nd place winner. Provo, Utah (2017).
5. Franson, J.J., Sevey, R., Zhao, J., White, J., Hilton, A., Rees, A., Ong, K.L., Choksi, N., Grose, J., Bridgewater, L.C. “Effect of Diet on the Microbiota of a Mouse Model with a Genetically Increased Metabolism Rate” American Society of Microbiology Intermountain Branch Meeting. Salt Lake City, Utah (2016).
6. Franson, J.J., White, J., Ong, K.L., Choksi, N., Hilton, A., Rees, A., Resolme, J., Zhao, J., Sevey, R., Olsen, K., Grose, J., Bridgewater, L.C. “Effect of Diet, Genes, and Microbiota on Glucose Tolerance in a Mouse Model with a Genetically Increased Metabolic Rate.” LDS Life Science Research Symposium. Lehi, Utah (2016).
7. Zhao, J., Grossarth, S., Grose, J., Bridgewater, L.C. “Phage hunting through the human gut.” Phabulous Phages Conference. Provo, Utah (2016)
8. White, J., Franson, J., Rees, A., Hilton, A., Ong, K.L., Choksi, N., Resolme, J., Zhao, J., Grose, J., Bridgewater, L.C. “PAS kinase and its role in the development of diabetes and obesity in mice.” Utah Conference for Undergraduate Research. Salt Lake City, Utah (2016).

9. Bowden, A.E., Beatty, A.M., Bridgewater, L.C. "Design and validation of a complex loading whole spinal segment bioreactor." Philadelphia Spine Research Symposium, held in conjunction with the Orthopaedic Research Society. Philadelphia, Pennsylvania (2015).
10. Hancock, J., Cook, M., Grose, J., Bridgewater, L.C., and Weber, K.S. "Role of PAS kinase and metabolism on immune cells." Autumn Immunology Conference. Chicago, Illinois (2015).
11. Rees, A., Franson, J., White, J., Ong, K.L., Choksi, N., Hilton, A., Grose, J., and Bridgewater, L.C. "The role of PAS kinase and the gut microbiome in metabolism and diabetes onset in mice. American Society for Microbiology. New Orleans, Louisiana (2015).
12. Yates, J.D. **Bridgewater, L.C.** "Evidence for a nuclear variant of decapentaplegic (dpp)." Southwest Regional Meeting of the Society for Developmental Biology. Aurora, Colorado (2014).
13. Mayo, J.L., Nichols, B.A., Olsen, D.S., Cordner, R.D., Hancock, C.R., Weber, K.S., Wilson, E., Edwards, J.G., Barrow, J.R., and **Bridgewater, L.C.** "The nBMP2 mutant mouse shows defects in intracellular calcium transport-regulated pathways." Southwest Regional Meeting of the Society for Developmental Biology. Aurora, Colorado (2014).
14. **Bridgewater, L.C.**, Christensen, S.L. Stolworthy, D.K., Fullwood, R.A., Merrell, T.M., Holland J.G., Harmon, L.M., Robinson, T., Bowden, A.E. "Development of an alpaca disc culture system for the study of intervertebral disc degeneration." Second International Spine Research Symposium, Philadelphia Spine Research Society. Philadelphia, Pennsylvania (2013).
15. Bowden, A.E, Stolworthy, D.K., Fullwood, R.A., Merrell, T.M., Robinson, T.F., Christensen, S.L., Holland J.G., **Bridgewater, L.C.** "Development of an alpaca disc culture system for the study of intervertebral disc degeneration." Orthopaedic Research Society Annual Meeting, San Antonio, Texas (2013).
16. Stolworthy, D.K., Fullwood, R.A., Merrell, T.M., Bowden, A.E., **Bridgewater, L.C.** "Mechanical parallels for a camelid cervical spine model of lumbar disc degeneration." Second International Spine Research Symposium, Philadelphia Spine Research Society. Philadelphia, Pennsylvania (2013).
17. Fullwood, R.A., Stolworthy, D.K., Bowden, A.E., and **Bridgewater, L.C.** "Alpaca cervical spine anatomy: Shape, size, AF/NP ratio." Emerging Ideas in Biomedical Research Conference, BYU, Provo, UT (2013). **(1st place prize in the poster competition.)**
18. Christensen, S.L., Holland, J.G., Fullwood, R.A., Stolworthy, D.K., Bowden, A.E., Robinson, T.F., and **Bridgewater, L.C.** "Development of an alpaca disc culture system for the study of intervertebral disc degeneration." Emerging Ideas in Biomedical Research Conference, BYU, Provo, UT (2013). **(2nd place prize in the poster competition.)**
19. Olsen, D.S., Bailey, K.T., Nichols, B.A., and **Bridgewater, L.C.** "Lack of nuclear BMP-2 causes reduced spleen size." American Society for Biochemistry and Molecular Biology Annual Meeting, Boston, Massachusetts (2013).
20. Nichols, B.A., Goar, W.A., McCune, B.T., and **Bridgewater, L.C.** "Nuclear localized BMP2 promotes cell cycle progression. American Society for Biochemistry and Molecular Biology Annual Meeting, Boston, Massachusetts (2013).
21. Rogers, A.C., Nichols, B.A., Loos, T.J., and **Bridgewater, L.C.** "Nuclear Bmp4 interacts with the SCF E3 ubiquitin ligase complex and inhibits the cell cycle." American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, California (2012).
22. Ricks, M.L., Falk, D.J., Farrell, J.T., Rees, M.B., Carr, J.M., Williams, D.T., Kooyman, D.L., **Bridgewater, L.C.**, and Seegmiller, R.E. "Premature osteoarthritis in the temporomandibular joint of heterozygous disproportionate micromelia mice." American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, California (2012).
23. Loos, T.J., and **Bridgewater, L.C.** "Nuclear Bmp4 (nBmp4) interacts with the SCF E3 ubiquitin ligase." American Society for Matrix Biology meeting, Charleston, South Carolina (2010).
24. Loos, T.J., and **Bridgewater, L.C.** "Nuclear Bmp4: a novel ROC1 and ROC2 binding partner." American Society for Biochemistry and Molecular Biology Annual Meeting, Anaheim, California (2010).
25. Cordner, R.D., Ventura, J., Blickenstaff, J., Walther, C., Mayo, J.L., Felin, J.E., Andreasen, B., Wallace, N., Cappechi, M.R., Edwards, J.G., and **Bridgewater, L.C.** "Mice bearing a targeted mutation of nBmp2

- display decreased memory capabilities. American Society for Biochemistry and Molecular Biology Annual Meeting, Anaheim, California (2010).
26. Baldwin, M. and **Bridgewater, L.C.** "Identification of a consensus DNA binding sequence for nGdf5." American Society for Biochemistry and Molecular Biology Annual Meeting, Anaheim, California (2010).
 27. McCune, B.T., Finley, M., Schmidt, A.D., Fox, C., Mayo, J.L., and **Bridgewater, L.C.** "Binding of nBmp2 to PLSCR1 suggests a possible mechanism for nBmp2 regulation of calcium-modulating proteins." American Society for Biochemistry and Molecular Biology Annual Meeting, Anaheim, California (2010).
 28. Evanson, B.G., Schmidt, A.D., Mayo, J.L., **Bridgewater, L.C.**, and Hancock, C.R.. "Nuclear bone morphogenetic protein 2 mutant mice exhibit slowed skeletal muscle relaxation and decreased tetany in the gastrocnemius, plantaris, soleus muscle complex." American Society for Biochemistry and Molecular Biology Annual Meeting, Anaheim, California (2010).
 29. Schmidt, A.D., Loganathan, S.K., Adam, M.M., Nichols, C.A., Mayo, J.L., Felin, J.E., Capecchi, M.R., Barrow, J.R., and **Bridgewater, L.C.** "Mice bearing a targeted inactivation of nBmp2 show decreased muscle strength." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2009).
 30. Holden, D.N., Mayo, J.L., Barrow, J.R., and **Bridgewater, L.C.** "The transcription factor Lc-Maf participates in *Col27a1* regulation during chondrocyte maturation." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2009).
 31. Davis, E.D., Fonhoue, B.S.D., Felin, J.E., McCune, B.T., and **Bridgewater, L.C.** "Nuclear Bmp2 (nBmp2) alters the expression of several genes." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2009).
 32. Adam, M.M., Nichols, C.A., Schmidt, A.D., Logonathan, S.K., Thomson, D., Capecchi, M.R., Barrow, J.R., and **Bridgewater, L.C.** "Mice with targeted inactivation of nBmp2 exhibit increased daytime activity." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2009).
 33. Cordner, R.D., Loos, T.J., and **Bridgewater, L.C.** "ROC1 and ROC2: Interactions with the nuclear variant of Bmp4." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2009).
 34. Loos, T.J., and **Bridgewater, L.C.** "Determining the function of nuclear Bmp4." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2009).
 35. Mayo, J.L., Wilkinson, S., Felin, J.E., Lin, C.-Y., and **Bridgewater, L.C.** "A potential role for the nuclear variant of Bmp2 (nBmp2) in carcinogenesis." American Association for Cancer Research Annual Meeting, Los Angeles, California (2007).
 36. Sudweeks, T.J. and **Bridgewater, L.C.** "A novel nuclear variant of Bmp4." American Association for Cancer Research Annual Meeting, Los Angeles, California (2007).
 37. Jensen, J.D., Sperry, D.K., Hansen, J.D., Davis, R.E., Felin, J.E., and **Bridgewater, L.C.** "Nuclear localization of GDF5 is mediated by a bipartite nuclear localization signal." American Association for Cancer Research Annual Meeting, Los Angeles, California (2007).
 38. Hansen, J.D., Jensen, J.D., Sperry, D.K., Felin, J.E., and **Bridgewater, L.C.** "Nuclear localization of GDF5." American Association for Cancer Research Annual Meeting, Los Angeles, California (2007).
 39. **Bridgewater, L.C.**, Mayo, J.L., and Felin, J.E. "Nuclear localization of Bmp2." American Society for Matrix Biology Biannual Meeting, Nashville, Tennessee (2006).
 40. Seegmiller, R.E., Niederhauser, C.M., Montañó, C., Bomsta, B.D., Wink, A.E., Sudweeks, S.N., and **Bridgewater, L.C.** "Aggrecan expression in Dmm mice." American Society for Matrix Biology Biannual Meeting, Nashville, Tennessee (2006).
 41. Jensen, J.D., Felin, J.E., Meinhart, C., and **Bridgewater, L.C.** "Nuclear localization of GDF-5." American Society for Biochemistry and Molecular Biology Annual Meeting, San Francisco, California (2006).
 42. Mayo, J.L., Barrow, J.R., and **Bridgewater, L.C.** "Coordinate regulation of *Col11a2* and *Col27a1* by the transcription factor Lc-Maf." American Society for Biochemistry and Molecular Biology Annual Meeting, San Francisco, California (2006).

43. Niederhauser, C.M., Montañó, C., Bomsta, B.D., Seegmiller, R.E., Sudweeks, S.N, and **Bridgewater, L.C.** "Aggrecan 1 expression in *Dmm* mice." American Society for Biochemistry and Molecular Biology Annual Meeting, San Francisco, California (2006).
44. Felin, J.E., Mayo, J.L., and **Bridgewater, L.C.** "Nuclear localization of BMP2." American Society for Biochemistry and Molecular Biology Annual Meeting, San Francisco, California (2006).
45. Ellertson, B.D., Felin, J.E., Kubo, C., Merrell, K., and **Bridgewater, L.C.**, "Identification of proteins that bind a *Col11a2* enhancer element." American Society for Biochemistry and Molecular Biology Annual Meeting, San Francisco, California (2006).
46. Timme, D.W., Meinhart, C., Mason, B., and **Bridgewater, L.C.** "A novel function for a ribosomal protein in transcriptional regulation." American Society for Biochemistry and Molecular Biology Annual Meeting, San Francisco, California (2006).
47. Kubo, C., Richins, S., and **Bridgewater, L.C.** "A new transcriptional regulator of the *Col11a2* gene." American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, California (2005).
48. Kunz, W.B., Meinhart, C., Olsen, J., and **Bridgewater, L.C.** "Identification of proteins that bind a chondrocyte-specific enhancer element." American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, California (2005).
49. Rogers, C.D., Mason, B., Timme, D., and **Bridgewater, L.C.** "Identification of candidate transcriptional regulators of the *Col11a2* gene. American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, California (2005).
50. Genzer, M.A., DeWidt, S.P., and **Bridgewater, L.C.** "The role of SOX9 dimerization in cartilage gene regulation." American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, California (2005).
51. Haberle, T., Tait, M.A., Moss, J.B., and **Bridgewater, L.C.** "The transcription factor MyoD binds to a cartilage-specific enhancer element. American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, California (2005).
52. Mayo, J.L., and **Bridgewater, L.C.** "Cartilage-specific collagen gene regulation by the transcription factor Lc-Maf." American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, California (2005).
53. Bomsta, B., **Bridgewater, L.C.**, Fernandes, R. and Seegmiller, R.E. "Structural changes in fetal growth cartilage precede postnatal dwarfism in mice heterozygous for Disproportionate micromelia. American Society for Matrix Biology Semiannual Meeting, San Diego, California (2004).
54. Bomsta, B.D., Gessel, L., **Bridgewater, L.C.**, and Seegmiller, R.E. "Histopathological changes in relation to proteoglycan degradation in articular cartilage of disproportionate micromelia mice as a predisposing factor leading to osteoarthritis" Osteoarthritis Research Society International Annual Meeting, Chicago, Illinois (2004)
55. Jenkins, E., Pace, J.M., and **Bridgewater, L.C.** "SOX9 regulates transcription of the new minor fibrillar collagen gene, *COL27A1*." American Society for Biochemistry and Molecular Biology Annual Meeting, Boston, Massachusetts (2004).
56. Moss, J., Smith, S., Orme, N., Jackson, T., Jenkins, E., Hillam, A., Carmack, T., Harris, L., and **Bridgewater, L.C.** "Identification of two novel regulatory elements in the first intron of the *Col11a2* gene." American Society for Biochemistry and Molecular Biology Annual Meeting, Boston, Massachusetts (2004).
57. **Bridgewater, L.C.**, Orme, N.M., Smith, S.A., Miller, G.C., Hillam, A., Carmack, T.T., Bennion, K.K., Clarke, J.W., Potter, J.L., and Harris, L.R. "Positive and negative *cis* elements affect the activity of two *Col11a2* enhancer elements." Gordon Conference on Cartilage Biology and Pathology, Ventura, California (2003).
58. Murphy, D.L., Parker, W.B., Rodriguez, R.R., Poole, A.R., Schaalje, G.B., Seegmiller, R.E., and **Bridgewater, L.C.** "*Cho* mouse articular cartilage reveals ultrastructural changes in relation to collagen degradation: the potential for transgene rescue of osteoarthritis and chondrodysplasia." American

- Society for Matrix Biology Annual Meeting, Houston, Texas (2002).
59. Crosby, B., Vaughn, S., **Bridgewater, L.C.**, and Seegmiller, R.E. "Mice bearing a type XI collagen mutation show premature deterioration of the femoral articular surface. American Society for Matrix Biology Annual Meeting, Houston, Texas (2002).
 60. Vaughn, S., Crosby, B., **Bridgewater, L.C.**, and Seegmiller, R.E. "Progression of early-onset osteoarthritis of the femoral condyle in mice with a *Col2a1* mutation. American Society for Matrix Biology Annual Meeting, Houston, Texas (2002).
 61. Harris, L.R., Miller, G.M., and **Bridgewater, L.C.** "A cis-acting element in the 5' region of the *Col11a2* gene acts cooperatively with two known enhancers." American Society for Matrix Biology Annual Meeting, Houston, Texas (2002).
 62. Orme, N.M., Harris, L.R., Jenkins, E., and **Bridgewater, L.C.** "Identification of a negative regulatory element in the first intron of the mouse *Col11a2* gene." American Society for Matrix Biology Annual Meeting, Houston, Texas (2002).
 63. Harris, L.R., Miller, G.C., and **Bridgewater, L.C.** "Cis-acting elements in the 5' region of the *Col11a2* gene cooperate with two known enhancers to increase transcriptional activity." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2002).
 64. Babcock, W., Seegmiller, R.E., and **Bridgewater, L.C.** "Ultrastructural differences in the articular cartilage of mice genetically predisposed to osteoarthritis." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2002).
 65. Bennion, K.K., Walker, M.D., Moss, J.B., Chen, R.K., Taylor, H., Freeman, E., Thulin, C.D., and **Bridgewater, L.C.** "Identification of proteins that trans-activate the D/E enhancer of the *Col11a2* gene." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2002).
 66. Jackson, T.L., and **Bridgewater, L.C.** "Examination of AP-4 as a transcriptional activator of the *Col11a2* chondrocyte-specific enhancer elements." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2002).
 67. Smith, S.A., Miller, G.C., Hillam, A., Carmack, T.T., Bennion, K.K., and **Bridgewater, L.C.** "Identification of a novel positive cis-acting element in the first intron of the mouse *Col11a2* gene." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2002).
 68. Rodriguez, R.R., Seegmiller, R.E., Poole, A.R., and **Bridgewater, L.C.** "Increased type II collagen degradation co-localizes with osteoarthritic lesions in *Col11a1* mutant mice." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2002).
 69. Moss, J.B., Bennion, K.K., Walker, M.D., Freeman, E., Thulin, C.D., and **Bridgewater, L.C.** "Identification of a protein that binds to the *Col11a2* B/C enhancer element." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2002).
 70. Jenkins, E., Smith, S.A., Miller, G.C., Hillam, A., Carmack, T.T., Bennion, K.K., and **Bridgewater, L.C.** "Identification of a possible cis-acting element in the first intron of the *Col11a2* gene." American Society for Biochemistry and Molecular Biology Annual Meeting, New Orleans, Louisiana (2002).
 71. Seegmiller, R.E., Ryder, V., Jackson, R., Rodriguez, R., Vu, H., Babcock, W., Poole, R., Crowe, R., and **Bridgewater, L.C.** "Comparison of two collagen mutant mouse lines that serve as models of early-onset osteoarthritis in human chondrodysplasia." Gordon Conference on Collagen, New London, New Hampshire (2001).
 72. Seegmiller, R.E., Ryder, V., and **Bridgewater, L.C.** "Histological and ultrastructural evidence of osteoarthritis in mice carrying a semi-dominant mutation of *Col2a1*." Gordon Research Conference on Signal Transduction by Engineered Extracellular Matrices, Tilton, New Hampshire (2000).
 73. Holsinger, D., Ellison, T., Chen, R., Winkel, V., Sampson, J., Walker, M., de Crombrughe, B., and **Bridgewater, L.C.** "Search for protein-binding sites in three chondrocyte-specific enhancer elements from the mouse *Col11a2* gene." First Symposium of the International Society for Matrix Biology, Philadelphia, Pennsylvania (2000).
 74. Potter, J., Clarke, J., Carmack, T., Hillam, A., Bennion, K., and **Bridgewater, L.C.** "A systematic search

- for chondrocyte-specific enhancers in the mouse *Col11a2* gene." First Symposium of the International Society for Matrix Biology, Philadelphia, Pennsylvania (2000).
75. Seegmiller, R.E., Ryder, V., and **Bridgewater, L.C.** "Histological and ultrastructural evidence of osteoarthritis in mice carrying a semi-dominant mutation of *Col2a1*." First Symposium of the International Society for Matrix Biology, Philadelphia, Pennsylvania (2000).
 76. **Bridgewater, L.C.**, and de Crombrughe, B. "Chondrocyte-specific enhancer elements in the *Col11a2* and *Col2a1* genes share common characteristics." American Association for Cancer Research, Philadelphia, Pennsylvania (1999).
 77. **Bridgewater, L.C.**, McKinney, S., Zhang, Z., Lefebvre, V., and de Crombrughe, B. "The role of HMG binding sites in *Col11a2* chondrocyte-specific enhancers." Gordon Conference on Collagen, New London, New Hampshire (1999).
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