Curriculum Vitae

Last Updated: 10/09/22

PERSONAL DATA

Name: Gabrielle Kardon
Citizenship: United States

EDUCATION

Years	Degree	Institution (Area of Study)
1980 - 1984	B.S.	Yale University (Geology) New Haven, CT
1986 - 1988	M.S.	University of Michigan (Paleobiology) Ann Arbor, MI
1991 - 1997	Ph.D.	Duke University (Developmental Biology) Durham, NC
1998 - 2004	Postdoctoral Fellow	Harvard Medical School (Developmental Biology) Boston, MA

ACADEMIC HISTORY

Human Genetics

08/01/2004	Hire, Tenure Track - Scientist Scholar, Assistant Professor
07/01/2011	Tenure
07/01/2011	Promotion, Associate Professor
07/01/2017	Promotion, Professor
07/01/2019	HA and Edna Benning Endowed Chair in Genetics

PROFESSIONAL EXPERIENCE

Full-Time Positions

1984 - 1985	Policy Analyst, Environmental Protection Agency, Washington, DC
1985 - 1988	Teaching and Curatorial Assistant, University of Michigan, Ann Arbor, MI
1989 - 1990	Knauss Fellow, National Oceanic and Atmospheric Administration, Silver Spring, MD
1990-1991	Science Teacher, Holton Arms School, Bethesda, MD
1991 - 1996	Teaching Assistant, Duke University and Duke Medical School, Durham, NC
1996	Instructor, Duke University, Durham, NC
1996 - 1998	Embryology Teaching Assistant, Marine Biology Lab, Woods Hole, MA
2004 - 2011	Assistant Professor, University of Utah School of Medicine, Department of Human Genetics, Salt Lake City, UT
2011 - 2017	Associate Professor, University of Utah, Salt Lake City, UT
2017 - present	Professor, University of Utah, Salt Lake City, UT
2014 - 2018	Co-Director MD-PhD Program, University of Utah, Salt Lake City, UT
2018- present	Associate Member, Huntsman Cancer Institute, Cell Response and Regulation Research Program

Editorial Experience

2007 - 2012	Member Editorial Board, Developmental Dynamics

Reviewer Experience

Reviewer for Cell Reports, Cell Stem Cell, Development, Developmental Biology, Developmental Cell, Developmental Dynamics, Differentiation, eLife, Evolution and Development, Experimental Cell Research, Evolution and Development, Frontiers in Aging Neuroscience, Genes and Development, Journal of Cell Biology, Journal of Cell Science, JoVES, Mechanisms of Development, Nature, Nature Cell Biology, Nature Communications, Nature Medicine, PLoS Genetics, PLoS One, PNAS

SCHOLASTIC HONORS

1986	Scott Turner Research Grant in Earth Science
1995	Outstanding student poster award, honorable mention. Society for Developmental Biology national meeting
1996	Outstanding student poster award, 3rd place. Society for Developmental Biology national meeting
1996	Grants-in-Aid of Research Sigma Xi
1996 - 1997	Duke Dissertation Year Fellowship
1999 - 2012	Ruth L. Kirschtein NIH NRSA Postdoctoral Fellow, Harvard Medical School
2006 - 2010	Pew Scholar Award
2012	FASEB BioArt winning scientific image
2012	Nikon Small World Image of Distinction
2019-present	HA and Edna Benning Endowed Chair in Genetics

ADMINISTRATIVE EXPERIENCE

Administrative Duties

2014 - 2018	Co-Director MD-PhD Program, University of Utah Responsible for recruitment and mentoring of trainees, overseeing PhD training, establishing and implementing strategic goals of program

Grant Review Committee/Study Section

2008 - 2009	Ad Hoc Reviewer, American Heart Association Region III Committee 5B: Cell Transport, Cell Physiology, and Molecular Signaling
2011	Ad Hoc Reviewer, Skeletal Muscle and Exercise Physiology Study Section, Center for Scientific Review, NIH
2015	Ad Hoc Reviewer, Arthritis and Musculoskeletal and Skin Diseases Special Grants Review Committee, NIH
2017	Ad Hoc Reviewer, Development 2 Study Section, Center for Scientific Review, NIH
2018-2022	Standing Member, Arthritis and Musculoskeletal and Skin Diseases Special Grants Review Committee, NIH

Symposium/Meeting Chair/Coordinator

2008	Program Committee, Batsheva Seminar: Integrating Perspectives on the Development of the Musculoskeletal System, Neve Zohar, Israel
2012	Organizing Committee, Myomatrix: Cure Congenital Muscular Dystrophy Meeting, Reno, Nevada
2013	Co-Chair, Gordon Research Conference on Myogenesis, Il Ciocco, Italy
2015	Chair, Gordon Research Conference on Myogenesis, Il Ciocco, Italy
2017	Co-Organizer, national meeting on Congenital Diaphragmatic Hernias (CDH), Salt Lake City, UT

UNIVERSITY COMMUNITY ACTIVITIES

University Level

2008 - 2013	Member, Institutional Biosafety Committee

Health Sciences Level

2013 - 2014	Chair, Core Research Facilities, Imaging Core Faculty Advisory Committee
2018 – present	Organizer, Monthly Muscle Meeting (research meeting of labs conducting muscle research)

Department Level

2004 - 2005	Member, Human Genetics, Search Committee
2007 - 2008	Member, Human Genetics, Search Committee
2009 - 2010	Member, Human Genetics, Search Committee
2017 - 2019	Member, Evolutionary Genetics and Genomics, Search Committee
2020-2021	Chair, Human Genetics, Search Committee

Programs, Centers & Institutes

2007 - 2014	Advisor, Program in Molecular Biology, First Year Graduate Students

2011 - 2013 Member, Program in Molecular Biology, Admissions Committee
2014 - 2018 Co-Director, MD/PhD Program

CURRENT MEMBERSHIPS IN PROFESSIONAL SOCIETIES

Society for Developmental Biology, American Society of Human Genetics

FUNDING

Active Grants

04/01/21 - 03/31/26 Genetic and Environmental Regulation of Diaphragm Development and Congenital Diaphragmic Hernias
R01 HD104317
Direct Costs: $1,563,006 Total Costs: $2,381295
National Institutes of Health
Role: Principal Investigator

11/01/21-10/31/23 Deciphering the Mechanisms by which Acute Viral Infection Leads to Persistent Symptoms
Direct Costs: $200,000
Pew Innovation Fund Award
Role: co-Principal Investigator with Deborah Lenschow

05/1/15- Identification of Signaling Pathways in and Treatments for Congenital Diaphragmatic Hernias
Direct Costs: $120,00/year
Role: Principal Investigator
Wheeler Foundation

Past Grants

03/01/99 - 02/28/02 Specification of Muscle Pattern in the Amniote Limb,
Ruth L. Kirschstein Individual NRSA F32 HD08352
Principal Investigator: Gabrielle Kardon
National Institute of Child Health and Human Development
Role: Principal Investigator

07/01/06 - 07/31/11 Development of the Vertebrate Musculoskeletal System
Principal Investigator: Gabrielle Kardon
Direct Costs: $222,224 Total Costs: $240,002
The Pew Charitable Trusts
Role: Principal Investigator

08/01/06 - 06/30/11 Muscle and Muscle Connective Tissue Development in the Vertebrate Limb
R01 HD053728
Principal Investigator: Gabrielle Kardon
Direct Costs: $1,077,709 Total Costs: $1,589,759
National Institutes of Health
Role: Principal Investigator

09/01/07 - 08/31/10 Ruth L Kirschstein NRSA to Postdoctoral Fellow Thomas Beres
F32 HD055011
Principal Investigator: Gabrielle Kardon
Direct Costs: $100,924 Total Costs: $100,924
National Institute of Child Health and Human Development
Role: Principal Investigator

07/01/09 - 06/30/12 Role of Connective TIssue Fibroblasts in Muscle Regeneration
Principal Investigator: Gabrielle Kardon
Direct Costs: $376,299 Total Costs: $413,929
Muscular Dystrophy Association
Role: Principal Investigator

06/01/12 - 05/31/15 Role of Connective Tissue in Diaphragm Development and Hernias
Principal Investigator: Gabrielle Kardon

Direct Costs: $345,455 Total Costs: $380,000
March of Dimes Foundation
Role: Principal Investigator

01/01/13 - 08/31/13 2013 Myogenesis Gordon Research Conference and Seminar
R13 AR064646
Principal Investigator: Gabrielle Kardon
Direct Costs: $18,000 Total Costs: $18,000
National Institute of Arthritis and Musculoskeletal and Skin Diseases
Role: Principal Investigator

01/01/15 - 08/31/15 2015 Myogenesis Gordon Conference
Principal Investigator: Gabrielle Kardon
Direct Costs: $8,390 Total Costs: $8,390
French Muscular Dystrophy Association
Role: Principal Investigator

01/01/15 - 08/31/15 2015 Myogenesis Gordon Research Conference
Principal Investigator: Gabrielle Kardon
Direct Costs: $5,000 Total Costs: $5,000
March of Dimes Foundation
Role: Principal Investigator

01/01/15 - 08/31/15 2015 Myogenesis Gordon Research Conference and Seminar
R13 AR068143
Principal Investigator: Gabrielle Kardon
Direct Costs: $16,675 Total Costs: $16,675
National Institute of Arthritis and Musculoskeletal and Skin Diseases
Role: Principal Investigator

01/01/15 - 08/31/15 2015 Myogenesis Gordon Conference
Principal Investigator: Gabrielle Kardon
Direct Costs: $9,900 Total Costs: $9,900
CureDuchenne
Role: Principal Investigator

01/01/11 - 12/31/16 Role of Muscle Connective Tissue in Muscle and Tendon Development
R01 HD053728
Principal Investigator: Gabrielle Kardon
Direct Costs: $1,000,000 Total Costs: $1,500,000
National Institute of Child Health and Human Development
Role: Principal Investigator

10/01/12 - 09/30/16 Lox Musculoskeletal Activities
Principal Investigator: Gabrielle Kardon
Direct Costs: $29,300 Total Costs: $29,300
United States-Israel Binational Science Foundation
Role: co-Principal Investigator

06/01/15 - 11/30/18 Genetic, Molecular, and Cellular Mechanisms Regulating Development of Congenital Diaphragmatic Hernias
Principal Investigator: Gabrielle Kardon
Direct Costs: $295,455 Total Costs: $325,001
March Of Dimes Birth Defects Foundation
Role: Principal Investigator

07/01/16 - 06/30/21 Development of the Diaphragm and Congenital Diaphragmatic Hernias (CDH)
R01 HD087360
Direct Costs: $1,037,500 Total Costs: $1,556,250
Principal Investigator: Gabrielle Kardon
National Institutes of Health
Role: Principal Investigator

TEACHING RESPONSIBILITIES/ASSIGNMENTS

Course and Curriculum Development

2008 – 2017, 2022 Evolution and Development, Department of Human Genetics, taught biannually, 8-10 Graduate Students

Courses Directed

2008 - 2017 Evolution and Development, Department of Human Genetics, taught biannually, 8-10 graduate students

2009 - 2011 Concepts in Developmental Biology, Department of Human Genetics, taught biannually, 15-20 graduate students

Course Lectures

2006 Instructor, H GEN 6040: Concepts of Developmental Biology, 20 students, University of Utah, Human Genetics

2007 Instructor, MBIOL 6100: Seminars in Molecular Biology, 7 students, University of Utah, Human Molecular Biology and Genetics

2008 Course Director and Instructor, H GEN 6091: Evolution & Development, 9 students, University of Utah, Human Genetics

2009 Course Director and Instructor, H GEN 6040: Concepts of Developmental Biology, 20 students, University of Utah, Human Genetics

2009 Course Director and Instructor, H GEN 6091: Evolution & Development, 8 students, University of Utah, Human Genetics

2011 Course Director and Instructor, H GEN 6091: Evolution & Development, 8 students, University of Utah, Human Genetics

2012 Instructor, University of Michigan. Organogenesis of the Musculoskeletal System

2013 Instructor, H GEN 6040: Concepts of Developmental Biology, 14 students, University of Utah, Human Genetics

2013 Course Director and Instructor, H GEN 6091: Evolution & Development, 8 students, University of Utah, Human Genetics

2013 Instructor, MBIOL 6420: Genetics and Genomes, 42 students, University of Utah, Molecular Biology

2014 Instructor, MBIOL 6420: Genetics and Genomes, 42 students, University of Utah, Molecular Biology

2015 Instructor, NYU School of Medicine. Stem Cell Biology

2015 Instructor, MBIOL 6420: Genetics and Genomes, 19 students, University of Utah, Molecular Biology

2015 Instructor, Ohio State University. Wellstone Myology Course, national course on muscle biology and diseases

2015 Instructor, HGEN 6110: Molecular Medicine Research Seminar, 15 students, University of Utah, Human Genetics

2016 Instructor, MBIOL 6420: Genetics and Genomes, University of Utah, Molecular Biology

2017 Course Director and Instructor, H GEN 6091: Evolution & Development, 8 students, University of Utah, Human Genetics

2017 Instructor, MBIOL 6420: Genetics and Genomes, University of Utah, Molecular Biology

2018 Instructor, MBIOL 6420: Genetics and Genomes, University of Utah, Molecular Biology

2019 Instructor, MBIOL 6420: Genetics and Genomes, University of Utah, Molecular Biology

2020 Instructor, MBIOL 6420: Genetics and Genomes, University of Utah, Molecular Biology

Trainee Supervision

Faculty

2013 - Present Advisor/Mentor, Russell Butterfield, University of Utah. Clinical Faculty

Visiting Faculty

2013 - 2018 Advisor/Mentor, Sam Mathew, Regional Center for Biotechnology, Delhi, India. Wellcome Trust-DBT Intermediate Fellow

Fellow

2005 - 2009	Supervisor, Thomas Beres, University of Utah. Recipient of F32 Award *Trainee's Current Career Activities:* Scientific Review Officer, Center for Scientific Review, NIH, Washington, DC
2006 - 2009	Supervisor, David Hutcheson, University of Utah. Postdoctoral Fellow *Trainee's Current Career Activities:* Research Instructor, Department of Neurobiology and Anatomy, University of Utah, Salt Lake City, UT
2008 - 2012	Supervisor, Sam Mathew, University of Utah. Postdoctoral Fellow *Trainee's Current Career Activities:* Assistant Professor and Wellcome Trust-DBT Intermediate Fellow, Regional Center for Biotechnology, Delhi, India
2017- present	Supervisor, Elizabeth Sefton, University of Utah. Postdoctoral Fellow Recipient of F32 and K99/R00 awards
2017- present	Supervisor, Brittany Collins, University of Utah. Postdoctoral Fellow
2020-2021	Supervisor, Robert Musci, University of Utah. Postdoctoral Fellow

PhD/Doctorate

2005	Supervisor, Megan Senchuk, University of Utah. Rotation Student
2007	Supervisor, Xiaoyung Wu, University of Utah. Rotation Student
2008	Supervisor, Tiffani Jones, University of Utah. Rotation Student
2008	Supervisor, Jonathan Kassel, University of Utah. Rotation Student
2009	Supervisor, Brett Baumgartner, University of Utah. Rotation Student
2009	Supervisor, Andres Romero-Carvajal, University of Utah. Rotation Student
2011	Supervisor, Shrutokirti De, University of Utah. Rotation Student
2012	Supervisor, Emily Ogle, University of Utah. Rotation Student
2013	Supervisor, Mattie Casey, University of Utah. Rotation Student
2014	Supervisor, Thomas Carter, University of Utah. Rotation Student
2015	Supervisor, Will Burnet, University of Utah. Rotation Student
2015	Supervisor, Josh Daugherty, University of Utah. Rotation Student
2016	Supervisor, Kimberly Coffman, University of Utah. Rotation Student
2016	Supervisor, Spenser Arnesen, University of Utah. Rotation Student
2016	Supervisor, Steve Knutsen, University of Utah. Rotation Student
2017	Supervisor, Nikki Russell, University of Utah. Rotation Student
2019	Supervisor, Chris Simeone, University of Utah. Rotation Student
2019	Supervisor, Nathan Burns, University of Utah. Rotation Student
2019	Supervisor, Kevin Chui, University of Utah. Rotation Student
2020	Supervisor, Mya Schieb, University of Utah. Rotation Student
2021	Supervisor, Ommar Shennib, University of Utah. Rotation Student

MD, PhD

2011	Supervisor, Peter Hendrickson, University of Utah. Rotation Student
2014	Supervisor, Edwin Lin, University of Utah. Rotation Student
2014	Supervisor, Claire Bensard, University of Utah. Rotation Student

Medical Student

2006	Supervisor, Mark Hansen, University of Utah. Summer Student

Undergraduate

2013	Supervisor, Christina Maruyuma, University of Utah. Summer Student

Graduate Student Committees

2005 - 2009	Member, Baijayanta Maiti, University of Utah, PhD/Doctorate Committee. "Molecular Pathogenesis of Select Mutations in DMD and Sepn1"
2005 - 2010	Member, Nadja Makki, University of Utah, PhD/Doctorate Committee. "The Role of HoxA1 in Mammalian Hindbrain, Inner Ear, and Neural Crest Development"
2006 - 2011	Member, JP de la O, University of Utah, PhD/Doctorate Committee.

	"Defining the cell of origin and mechanism of pancreatic tumorigenesis"
2006 - 2007	Member, Jared Cassiano, University of Utah, Masters Committee
2006 - 2012	Member, Derrick Gunther, University of Utah, PhD/Doctorate Committee. "Roles of the Ryanodine Receptor Calcium Release Channels in Development and Disease"
2006 - 2010	Member, Andy Aman, University of Utah, PhD/Doctorate Committee. "Wnt/β-catenin Signaling Regulates Multiple Aspects of Lateral Line Morphogenesis"
2007 - 2011	Member, Xu Wang, University of Utah, PhD/Doctorate Committee. "Wnt Signaling in Hypothalamic Neural Progenitor Differentiation"
2008 - 2011	Member, Tatum Simonson, University of Utah, PhD/Doctorate Committee. "Genetic Adaptation to High Altitude in Tibetans"
2009 - 2014	Member, Sydney Stringham, University of Utah, PhD/Doctorate Committee. "The genetic architecture of morphological changes in ninespine sticklebacks (Pungitius pungitius) and the domesticated pigeon (Columba livia): insights from population analysis, quantitative trait mapping and whole-genome resequencing"
2009 - 2014	Member, Matt Keefe, University of Utah, PhD/Doctorate Committee. Molecular and “Cellular Mechanisms Regulating Exocrine Pancreas Growth and Regeneration”
2009 - 2014	Member, Uchenna Emechebe, University of Utah, PhD/Doctorate Committee. "Tbx3 Regulates Mammalian Digit Development via Shh Dependent and Shh Independent Mechanisms"
2009 - 2014	Member, Aaron Larson, University of Utah, PhD/Doctorate Committee. "Post-Transcriptional Gene Regulation by the DMD 3’UTR"
2009 - 2015	Member, Rob Duncan, University of Utah, PhD/Doctorate Committee. "An investigation of Wnt function in radial glial neural progenitor cells in the zebrafish hypothalamus"
2010 - 2014	Member, Brett Baumgartner, University of Utah, PhD/Doctorate Committee. "The Multifunctional Protein Beta-Catenin and Pancreatic Organogenesis"
2010	Member, Hui Wang, Universite Paris VI - Pierre et Marie Curie, PhD/Doctorate Committee. "Involvement of Bmp signaling in fetal myogenesis during chick wing development"
2010 - 2015	Member, Molly Judd, University of Utah, PhD/Doctorate Committee. "JNK/AP-1 Signaling During Drosophila Development"
2012 - 2013	Member, Yong Wan, University of Utah, PhD/Doctorate Committee. "Fluorender, an interactive tool for confocal microscopy data visualization and analysis"
2012 - 2015	Member, Daria Drobsheva, University of Utah, PhD/Doctorate Committee. "Transformation of distinct mammary epithelial cell populations influences breast cancer phenotype"
2012 - 2015	Member, Dallas Shi, University of Utah, PhD/Doctorate Committee. "Platelets, cytokines, and proangiogenic factors in the maintenance of vessel integrity"
2013	Member, Alicia Mayeuf, University of Pierre et Marie Curie, PhD/Doctorate Committee. "Cell fate decisions of multipotent progenitors in the somite of the mouse embryo"
2014	Member, Phong Nguyen, Monash University, PhD examiner “Origins and genetic control of the external cell layer”
2013 - 2016	Member, Katie Mitzefelt, University of Utah, PhD/Doctorate Committee “Induced pluripotent stem cells and genome engineering in the study of the human 343delt hspb5 chaperone associated with early-onset skeletal myopathy”
2013 - 2017	Member, Kelsey Rogers, University of Utah, PhD/Doctorate Committee “Recombination-mediated mechanisms of Poxvirus evolution”
2014 - 2017	Member, Nathan Krah, University of Utah, PhD/Doctorate Committee “Maintenance of acinar cell differentiation by PTF1A inhibits pancreatic cancer initiation”
2015 - 2016	Member, Rachel Crosby, University of Utah, PhD/Doctorate Committee
2017-2021	Member, Jon Belyeu, University of Utah, PhD/Doctorate Committee “Investigating Inherited and Spontaneous Structural Variation in the Human Genome”
2017-2021	Member, Kristi Russell, University of Utah PhD/Doctorate Committee “Understanding Disease Pathology of Amyotrophic Lateral Sclerosis by Determining Novel Disease-Causing Loci”
2019-2020	Member, Joan Cheng, University of Utah PhD/Doctorate Committee
2019-present	Member, Melissa Bujnis, University of Utah PhD/Doctorate Committee

2019-present	Member, Jerry Duran, University of Utah PhD/Doctorate Committee
2020-present	Member Tahmineh Kandelouei, University of Utah PhD/Doctorate Committee
2021-present	Member, Sarah LaPotin, University of Utah PhD/Doctorate Committee
2022-present	Member, Ryan Clough, University of Utah PhD/Doctorate Committee
2006 - 2012	**Chair**, Malea Murphy, University of Utah, PhD/Doctorate Committee. "Molecular and Cellular Regulation of Stem Cells During Muscle Regeneration" Trainee on Genetics Training Grant 2007-2010 Recipient Lymn Award for outstanding young scientist, FASEB Satellite Cell Meeting 2010 Recipient of Ruth L. Kirschstein individual NRSA postdoctoral fellowship *Trainee's Current Career Activities*: Manager of the Integrated Microscopy and Imaging Laboratory, Texas A&M Health Sciences Center
2008 - 2014	**Chair**, Allyson Merrell, University of Utah, PhD/Doctorate Committee. "Whole or Hole? Development of the Diaphragm and Congenital Diaphragmatic Hernias" Recipient of SDB SW regional award for outstanding student presentation 2013 Recipient of Graduate Research Fellowship 2012-2013 Recipient of Prahl Award: outstanding PhD graduate in Health Sciences, U of Utah 2015 Recipient of Cholangiocarinoma foundation fellowship 2015-2016 *Trainee's Current Career Activities*: Postdoctoral fellow in Ben Stanger lab, University of Pennsylvania
2011 - 2016	**Chair**, Mary Colasanto, University of Utah, PhD/Doctorate Committee. "Of Mice and Men: Bone and Connective Tissue Regulation of Muscle Development" Trainee on Developmental Training Grant 2013-2016 Poster Award, Gordon Research Conference on Myogenesis 2015 *Trainee's Current Career Activities*: Genomic Testing Consultant, Perkin Elmer Genomics
2011 - 2016	**Chair**, Alexandra Keefe, University of Utah, PhD/Doctorate Committee. Recipient of LRRH Graduate Fellowship 2011-2012 Trainee on Hematology Training Grant 2013-2016 Selected Attendee of Lindau Meeting of Nobel Laureates, Germany 2014 Recipient of University of Utah Graduate Research Fellowship 2015-2016 *Trainee's Current Career Activities*: Pediatric Fellow, University of Washington Medical School
2015 - 2020	**Chair**, Eric Bogenschutz, University of Utah, PhD/Doctorate Committee “Understanding the Hole Story: The Complex Etiology of Congenital Diaphragmatic Hernias” Trainee on Genetics Training Grant 2016-2019 *Trainee's Current Career Activities*: Postdoctoral Fellow Jackson Labs, ME
2020-present	**Chair**, Nathan Burns, University of Utah, PhD/Doctorate Committee “Role of Retinoic Acid Signaling in Development of the Diaphragm and Congenital Diaphragmatic Hernias Trainee on Developmental Biology Training Grant 2020-present
2021-present	**Chair**, Mya Scheib, University of Utah, PhD/Doctorate Committee “The Consequences of Chikungunya Viral Infection on Muscle Structure and Function”

Other Educational Activities

2008 - 2015	Lecturer, Lab Leadership and Staffing (2 hours/year), Research Administration Training Series, University of Utah
2012 - 2018	Genetics Lecture and Lab for Seventh Grade (6 hours/year), McGillis School, Salt Lake City, UT
2015 - Present	Outreach activities with Cherubs, national charity group to advocate for Congenital Diaphragmatic Hernia (CDH) research, awareness, and support (20 hours/year). Includes advocacy for CDH research at the Senate and House of Representatives, Washington, DC, participation in fund-raising and CDH awareness events, and co-organizer of 2017 national meeting on CDH
2017 – Present	Instructor 1 week/summer. American Indian Services Prep Program, Blanding, UT

2018 – Present Science@Sundance. Creator and organizer of special section of Science magazine devoted to reviews of science-related films premiering at the Sundance Film Festival

PEER-REVIEWED JOURNAL ARTICLES

1. **Kardon G** (1998). Evidence from the fossil record of an exaptation: conchiolin layers in corbulid bivalves. *Evolution Int J Org Evolution*, *52*(1), 68-79. (27 citations)
2. **Kardon G** (1998). Muscle and tendon morphogenesis in the avian hind limb. *Development*, *125*(20), 4019-32. (Cover Illustration) (203 citations)
3. **Kardon G**, Heanue TA, Tabin CJ (2002). Pax3 and Dach2 positive regulation in the developing somite. *Dev Dyn*, *224*(3), 350-5. (18 citations)
4. **Kardon G**, Campbell JK, Tabin CJ (2002). Local extrinsic signals determine muscle and endothelial cell fate and patterning in the vertebrate limb. *Dev Cell*, *3*(4), 533-45. (119 citations)
5. **Kardon G**, Harfe BD, Tabin CJ (2003). A Tcf4-positive mesodermal population provides a prepattern for vertebrate limb muscle patterning. *Dev Cell*, *5*(6), 937-44. (90 citations)
6. Schienda J, Engleka KA, Jun S, Hansen MS*, Epstein JA, Tabin CJ, Kunkel LM, **Kardon G** (2006). Somitic origin of limb muscle satellite and side population cells. *Proc Natl Acad Sci U S A*, *103*(4), 945-50. (127 citations)
7. Hutcheson DA*, Zhao J, Merrell A*, Haldar M, **Kardon G** (2009). Embryonic and fetal limb myogenic cells are derived from developmentally distinct progenitors and have different requirements for beta-catenin. *Genes Dev*, *23*(8), 997-1013. (Cover Illustration; Perspective by Messina and Cossu) (103 citations)
8. Hutcheson DA*, **Kardon G** (2009). Genetic manipulations reveal dynamic cell and gene functions: Creating a new view of myogenesis. *Cell Cycle*, *8*(22), 3675-8. (5 citations)
9. Murphy M*, **Kardon G** (2011). Origin of vertebrate limb muscle: the role of progenitor and myoblast populations. *Curr Top Dev Biol*, *96*, 1-32. (22 citations)
10. Mathew SJ*, Hansen JM, Merrell AJ*, Murphy MM*, Lawson JA, Hutcheson DA*, Hansen MS*, Angus-Hill M, **Kardon G** (2011). Connective tissue fibroblasts and Tcf4 regulate myogenesis. *Development*, *138*(2), 371-84. (Cover Illustration; Featured article; Recommended by Faculty 1000) (74 citations)
11. **Kardon G** (2011). Development of the musculoskeletal system: meeting the neighbors. *Development*, *138*(14), 2855-9. (6 citations)
12. Murphy MM*, Lawson JA, Mathew SJ*, Hutcheson DA*, **Kardon G** (2011). Satellite cells, connective tissue fibroblasts and their interactions are crucial for muscle regeneration. *Development*, *138*(17), 3625-37. (207 citations)
13. Wan Y*, Lewis AK, Colasanto M*, van Langeveld M, **Kardon G**, Hansen C (2012). A practical workflow for making anatomical atlases for biological research. *IEEE Computer Graphics and Applications*, *32*(5), 70-80.
14. Hu JK, McGlinn E, Harfe BD, **Kardon G**, Tabin CJ (2012). Autonomous and nonautonomous roles of Hedgehog signaling in regulating limb muscle formation. *Genes Dev*, *26*(18), 2088-102. (19 citations)
15. Rutkowski A, Bonnemann C, Brown S, Thorsteinsdottir S, Dominov J, Ruegg MA, Matter ML, Guttridge D, Crosbie-Watson RH, **Kardon G**, Nagaraju K, Girgenrath M, Burkin DJ (2013). Report on the Myomatrix Conference April 22-24, 2012, University of Nevada, Reno, Nevada, USA. *Neuromuscul Disord*, *23*(2), 188-91. (4 citations)
16. Merrell AJ*, **Kardon G** (2013). Development of the diaphragm -- a skeletal muscle essential for mammalian respiration. *FEBS J*, *280*(17), 4026-35. (17 citations)
17. Rohatgi A, Corbo JC, Monte K, Higgs S, Vanlandingham DL, **Kardon G**, Lenschow DJ (2014). Infection of myofibers contributes to increased pathogenicity during infection with an epidemic strain of chikungunya virus. *J Virol*, *88*(5), 2414-25. (6 citations)
18. Lours-Calet C, Alvares LE, El-Hanfy AS, Gandesha S, Walters EH, Sobreira DR, Wotton KR, Jorge EC, Lawson JA, Kelsey Lewis A, Tada M, Sharpe C, **Kardon G**, Dietrich S (2014). Evolutionarily conserved morphogenetic movements at the vertebrate head-trunk interface coordinate the transport and assembly of hypopharyngeal structures. *Dev Biol*, *390*(2), 231-46. (4 citations)
19. Murphy MM*, Keefe AC*, Lawson JA, Flygare SD, Yandell M, **Kardon G** (2014). Transiently active Wnt/beta-catenin signaling is not required but must be silenced for stem cell function during muscle regeneration. *Stem Cell Reports*, *3*(3), 475-88. (10 citations)
20. Pawlikowski B, Pulliam C, Betta ND, **Kardon G**, Olwin (2015). Pervasive satellite cell contribution to uninjured adult muscle fibers. *Skelet Muscle*, *5*, 42.

21. Nogueira JM, Hawrot K, Sharpe C, Noble A, Wood WM, Jorge EC, Goldhamer DJ, **Kardon G**, Dietrich S (2015). The emergence of Pax7-expressing muscle stem cells during vertebrate head muscle development. *Front Aging Neurosci*, *7*, 62.
22. Keefe AC*, Lawson JA, Flygare SD, Fox ZD, Colasanto MP*, Mathew SJ*, Yandell M, **Kardon G** (2015). Muscle stem cells contribute to myofibres in sedentary adult mice. *Nat Commun*, *6*, 7087. (Recommended by Faculty 1000) (8 citations)
23. Merrell AJ*, Ellis BJ, Fox ZD, Lawson JA, Weiss JA, **Kardon G** (2015). Muscle connective tissue controls development of the diaphragm and is a source of congenital diaphragmatic hernias. *Nat Genet*, *47*(5), 496-504. (Featured in New York Times, Recommended by Faculty 1000) (2 citations)
24. Keefe AC*, **Kardon G** (2015). A new role for dystrophin in muscle stem cells. *Nat Med*, *21*(12), 1391-3.
25. Domyan ET, Kronenberg Z, Infante CR, Vickrey AI, Stringham SA, Bruders R, Guernsey MW, Park S, Payne J, Beckstead RB, **Kardon G**, Menke, Yandell M, Shapiro (2016). Molecular shifts in limb identity underlie development of feathered feet in two domestic avian species. *eLife*, *5*.
26. Kikani, CK, Wu X, Paul L, Sabic H, Shen Z, Shabaka A, Keefe A*, Villanueva C, **Kardon G**, Graves B, Tantin D, Rutter K (2016). Ask integrates hormonal signaling with histone modification via Wdr5 phosphorylation to drive myogenesis. eLife Sept 23, 5.
27. Colasanto MP*, Eyal S, Mohassel P, Bamshad M, Bonnemman C, Zelzer E, Moon AM, **Kardon G**. (2016). Development of a subset of forelimb muscles and their attachments sites requires the ulnar-mammary syndrome gene *Tbx3*. *Disease Models and Mechanisms* 9(11): 1257-1269 (Cover Article)
28. Wan Y, Otsuna H, Holman HA, Bagley B, Ito M, Lewis AK, Colasanto M*, **Kardon G**, Ito K, Hansen C. (2017). FluoRender: joint freehand segmentation and visualization for many-channel fluorescence data analysis. BMC Bioinformatics 18(1): 280.
29. **Kardon G**, Ackerman AG, McCulley DJ, Shen Y, Wynn J, Shang L, Bogenschutz E*, Sun X, Chung WK. (2017). Congenital diaphragmatic hernias: from genes to mechanisms to therapies. *Dis Model Mech* 1;9 (11): 955-970.
30. Yamamoto M, Legendre NP, Biswas AA, Lawton A, Yamamoto S, Tajbakhsh S, **Kardon G**, Goldhamer DJ. (2018). Loss of MyoD and Myf5 in skeletal muscle stem cells results in altered myogenic programming and failing regeneration. Stem Cell Reports 10(2): 956-969.
31. Sefton EM*, Gallardo M, **Kardon G**. (2018). Developmental origin and morphogenesis of the diaphragm, an essential mammalian muscle. Dev. Biol. pii: S0012-1606(18)30146-5.
32. Collins BC* and **Kardon G**. (2018). Won't you be my neighbor? Muscle stem cells recruit endothelial cells to their niche. Cell Stem Cell 23(4): 455-456.
33. Heude E, Tesarova M, Sefton EM*, Jullian E, Adachi N, Grimaldi A, Zikmung T, Kaiser J, **Kardon G**, Kelly RG, Tajbakhsh S. 2018. Unique morphogenetic signatures define mammalian neck muscles and associated connective tissues. eLife Nov 19, 7.
34. Sefton EM* and **Kardon G.** 2019. Connecting muscle development, birth defects, and evolution: An essential role for muscle connective tissue. Current Topics in Developmental Biology 132:137-176.
35. Reidy PT, McKenzie AI, Mahmassani ZS, Petrocelli JJ, Nelson DB, Lindsay CC, Gardner JE, Morrow VR, Keefe AC*, Huffaker TB, Stoddard GJ, **Kardon G**, O'Connell RM, Drummond MJ. 2019 Aging impairs mouse skeletal muscle macrophage polarization and muscle-specific abundance during recovery from disuse. Am J Physiol Endocrinol Metab 317(1): E85-98.
36. Heden TD, Johnson JM, Ferrara PJ, Eshima H, Verkerke ARP, Wentzler EJ, Siripoksup P, Narowski TM, Coleman CB, Lin CT, Ryan TE, Reidy PT, de Castro Brás LE, Karner CM, Burant CF, Maschek JA, Cox JE, Mashek DG, **Kardon G**, Boudina S, Zeczycki TN, Rutter J, Shaikh SR, Vance JE, Drummond MJ, Neufer PD, Funai K. (2019). Mitochondrial PE potentiates respiratory enzymes to amplify skeletal muscle aerobic capacity. Sci Adv. Sept 11
37. Comai G, Heude E, Mella S, Paisant S, Pala F, Gallardo M, Langa F, **Kardon G**, Gopalakrishnan S, Tajbakhsh S. (2019). A distinct cardiopharyngeal mesoderm genetic hierarchy establishes antero-posterior patterning of esophagus striated muscle. eLife Sept 19, 8.
38. Agarwal M, Sharma A, Kumar P, Kumar A, Bjaradwaj A, Saini M, **Kardon G**, Mathew SJ*. (2020) Myosin heavy chain-embryonic regulates skeletal muscle differentiation during mammalian development. Development 147(7): Apr 6;147(7):dev184507.
39. Bogenschutz EL*, Sefton EM*, **Kardon G**. (2020) Cell culture system to assay candidate genes and molecular pathways implicated in congenital diaphragmatic hernias. Dev Biol Nov 1;467(1-2):30-38.

40. Bogenschutz EL*, Fox ZD, Farrell A, Wynn J, Moore B, Yu L, Aspelund G, Marth G, Yandell M, Shen Y, Chung WK, **Kardon G**. (2020) Deep whole-genome sequencing of multiple proband tissues and parental blood reveals the complex genetic etiology of congenital diaphragmatic hernias. HGG Advances Oct 22;1(1):100008.
41. Collins BC*, **Kardon G.** (2021) It takes all kinds: heterogeneity among satellite cells and fibro-adipogenic progenitors during skeletal muscle regeneration. Development 148(21).
42. Edel GG, Schaaf G, Wijnen RMH, Tibboel D, **Kardon G**, Rottier RJ. (2021) Cellular Origin(s) of Congenital Diaphragmatic Hernia. Front Pediatric 9:804486.
43. Sefton EM*, Gallardo M, Tobin CE, Colasanto MP*, Collins BC*, Merrell AM*, **Kardon G.** (2022) Fibroblast-derived HGF integrates muscle and nerve development during morphogenesis of the mammalian diaphragm. eLife. Sep 26;11:e74592.

* Trainee

BOOK CHAPTERS

1. G Kardon, TA Heanue, CJ Tabin (2004). The Pax/Six/Eya/Dach network in development and evolution. In G. Schlosser and G. Wagner (Eds.), *Modularity in Development and Evolution*. Chicago: Chicago University Press.

OTHER (Commentary/Letters/Editorials/Case Reports/Video/Film)

Newspaper

1. Zimmer C (2015). Behind each breath, an underappreciated muscle. (features Merrell et al. Nature Genetics 2015 research). *New York Times* Zimmer Article.

Other

1. **Kardon G** (2013). *Pax7CreERT2.* Mouse reagent that allows specific and efficient manipulation of muscle stem cells in vivo. Used by more than 250 labs internationally. https://www.jax.org/strain/017763
2. **Kardon G** (2017). Step of the lab and engage. Science 355(6330); 1234.
3. **Kardon G** (2018). Life in Triplicate. Science 359(6371); 1222.

Web/Podcast

1. McFadden T (2015). Science x Rhymes: Diaphragms! (features Merrell et al. Nature Genetics 2015 research). Available: Science X Rhymes Diaphragms!
2. **Kardon G** (2015). When basic science intersects with disease: a scientist's experience. The Scope Podcast. Podcast
3. **Kardon G** (2015). New insights into Congenital Diaphragmatic Hernias. The Scope Podcast. Podcast

PENDING PUBLICATIONS

Journal Articles

1. Lewis AK, Gallardo M, Sefton EM, Wan Y, Hansen C, **Kardon G**. Atlas of the developing limbs of mice. (in prep)

ORAL PRESENTATIONS

Meeting Presentations

International

2004	Developmental origin of muscle progenitors. Gordon Research Conference on Myogenesis, Il Ciocco, Italy
2007	Development, regeneration, and diseases of the vertebrate musculature: the role of muscle and connective tissue interactions. Pew Scholars Meeting, Puerto Vallerta, Mexico
2007	Muscle and muscle connective tissue development in the vertebrate limb. Gordon Research Conference on Myogenesis, Il Ciocco, Italy.
2008	Development and regeneration of the vertebrate musculature: the role of muscle and muscle connective tissue interactions. Batsheva Seminar on Development of the Musculoskeletal System, Neve Zohar, Israel

2009	Connective tissue and Tcf4 regulate muscle development. Myores Annual Congress, Saint Julian's, Malta
2010	Development of the vertebrate musculature: the role of Tcf4 and connective tissue fibroblasts. Pew Scholars Meeting, Playa Herradura, Costa Rica
2011	Connective tissue and Tcf4 regulate myogenesis. Batsheva Seminar on Development of the Musculoskeletal System, Neve Zohar, Israel
2013	Wnt/β-catenin signaling is active, but not required for stem cell function during muscle regeneration. Keystone Symposium on Stem Cell Regulation in Homeostasis and Disease, Banff, Canada
2014	Muscle stem cells are critical for muscle homeostasis and aging. International Society for Stem Cell Research Annual Meeting, Vancouver, Canada
2014	Whole or Hole? Development of the Diaphragm and Congenital Diaphragmatic Hernias. The Musculoskeletal System: from Development to Disease, Norwich, England
2015	Whole or Hole? Development of the Diaphragm and Congenital Diaphragmatic Hernias. EMBO Workshop on Integrative Perspective on Musculoskeletal Development, Ein Gedi, Israel
2015	Development and evolution of the diaphragm: a defining character of mammals. Pew Scholars Reunion Meeting, Grand Cayman, Cayman Islands.
2017	Development of the diaphragm and congenital diaphragmatic hernias. Gordon Conference on Myogenesis, Il Ciocco, Italy.
2018	Inspired by the Diaphragm: Development of an essential muscle and the etiology of Congenital Diaphragmatic Hernias. Meeting on Muscle Development, Regeneration, and Disease. Berlin, Germany
2019	Inspired by the diaphragm: development of the diaphragm and congenital diaphragmatic hernias. Society for Muscle Biology. San Jose, Costa Rica
2020	Muscle In Isolation (virtual): Inspired by the Diaphragm: Development of the Diaphragm and Congenital Diaphragmatic Hernias
2020	Cellular Dynamics of Muscle Regeneration. IMM (virtual)
2020	Cellular Dynamics of Muscle Regeneration. London Myology Forum (virtual)
2020	Inspired by the Diaphragm: Development of the Diaphragm and Congenital Diaphragmatic Hernias. Molecular Biology Society of Japan (virtual):
2021	ECTS Congress: Cellular Dynamics of Muscle Regeneration
2021	Cellular Dynamics of Muscle Regeneration. Virtual Padua Days of Myology and Mobility Medicine
2022	Cellular Dynamics of Muscle Regeneration. EMBO Workshop on Muscle Formation, Maintenance, Regeneration, Pathology
2022	Inspired by the Diaphragm: Development of the Diaphragm and Congenital Diaphragmatic Hernias. CDH International. Dublin, Ireland.
2023	Destruction and Recovery Following Viral Infection. Gordon Research Conference on Myogenesis, Il Ciocco, Italy.

<u>National</u>

1988	Testing functional hypotheses of conchiolin layer function in corbulid bivalves. Geological Society of America national meeting, Denver, CO
2004	Patterning of muscle in the vertebrate limb. Experimental Biology, Washington, DC
2009	Embryonic and fetal limb myogenic cells are derived from developmentally distinct progenitors. Society for Muscle Biology, New York, NY
2011	Interactions between satellite cells and connective tissue fibroblasts are critical for muscle regeneration. Mechanisms of Organ Repair and Regeneration, Elliot City, MD
2012	Muscle and connective tissue interactions during development and repair. Myomatrix Conference, Reno, NV
2012	Whole or Hole? Development of a Functional Diaphragm. Society for Muscle Biology, New York, NY
2012	Muscle and Connective Tissue in Development. American Physical Therapy Association, Research Retreat, Regenerative Medicine and Rehabilitation, Buffalo, NY

2012 Muscle and connective tissue interactions during development and regeneration. State of the Art Lectures. American Society for Bone and Mineral Research Annual Meeting, Minneapolis, MN

2013 How to make a muscle: the role of muscle stem cells and connective tissue. ASBMR Symposium: Cutting Edge Discoveries in Muscle Biology, Disease and Therapeutics, Baltimore, MD

2014 Interactions between muscle stem cells, fibroblasts, and macrophages are critical for muscle regeneration. Keystone Symposium on Fibrosis: From Bench to Bedside, Keystone, CO

2014 The role of satellite cells in muscle homeostasis. FASEB Meeting on Skeletal Muscle Satellite and Stem Cells, Steamboat Springs, CO

2015 Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. Society for Developmental Biology National Meeting, Snowbird, UT

2016 Of mice and men: Unexpected insights into muscle development from the Ulnar-Mammary Syndrome gene, *Tbx3*. Frontiers in Muscle Biology Meeting, Asilomar, CA.

2016 Metabolic requirements for satellite cell-mediated muscle regeneration in vivo. FASEB Meeting on Skeletal Muscle Satellite Cells and Regeneration. Keystone, CO.

2016 Of mice and men: Unexpected insights into muscle development from the Ulnar-Mammary Syndrome gene, *Tbx3*. Gordon Research Conference Musculoskeletal Biology and Bioengineering. Andover, NH.

2017 Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. Structural Birth Defects Meeting. Bethesda, MD

2017 Development of the diaphragm and CDH. CDH Conference. Salt Lake City, UT

2018 FASEB Meeting on Skeletal Muscle Satellite Cells and Regeneration. Steamboat Springs, CO.

2019 Cellular Regulation of Muscle Regeneration. Advances in Skeletal Muscle Biology in Health and Disease, Gainesville, FL

2021 Inspired by the Diaphragm: Development of the Diaphragm and Congenital Diaphragmatic Hernias. CDH Conference.

2022 Whole or hole: Development of the Diaphragm and Congential Diaphragmatic Hernias. Structural Birth Defects Meeting, Washington, DC

Local/Regional

2004 Developmental origin of adult muscle progenitors. Society for Developmental Biology, Southwest and Gulf Regional Meeting, Dallas, TX

2008 Development of the vertebrate musculoskeletal system. Second Annual Oregon Health and Science University Developmental Biology Symposium, Portland, OR

2013 Whole or hole? Development of a functional diaphragm. Organogenesis Symposium, Eugene, OR

Invited/Visiting Professor Presentations

International

2004 Patterning of muscle in the vertebrate limb. Université Pierre et Marie Curie, Paris, France

2007 Development of the vertebrate Musculature: the role of muscle and connective tissue interactions. Institut de Myologie, Hopital Pitié-Salpétrière, Paris, France

2008 Role of β-catenin signaling in vertebrate limb myogenesis. King's College London, London, England

2009 The role of Tcf4 and connective tissue fibroblasts in vertebrate muscle development. Fondazione San Raffaele del Monte Tabor, Milan, Italy

2010 Development of the vertebrate musculature: the role of Tcf4 and connective tissue fibroblasts. University Pierre et Marie Curie, Paris, France

2011 Muscle Development and Regeneration: the role of the connective tissue niche. Biomedical Research Centre, University of British Columbia, Vancouver, BC, Canada

2012 Muscle Regeneration: the role of muscle stem cells and their connective tissue. Patan Academy of Health Sciences, Kathmandu, Nepal

2013 Whole or hole? Development of a functional diaphragm. Pasteur Institute, Paris, France

2016 Metabolic requirements for satellite cell-mediated muscle regeneration in vivo. University of Ottawa, Ottawa, Ontario, Canada

2019 Wake up and come hither: The role of HGF/Met signaling in muscle development and regeneration. Institut De Biologie du Development de Marseille. Marseille, France.

2019 How to develop and regenerate muscle: the role of connective tissue in guiding muscle stem cells. Institut Pasteur. Paris, France

2019 How to develop and regenerate muscle: the role of connective tissue in guiding muscle stem cells. Institut Pasteur. Universite de Creteil. Paris, France

National

2006 Muscle and connective tissue development in the vertebrate limb. Department of Genetics and Development, Columbia University Medical Center, NY, NY

2006 Development of the vertebrate limb musculoskeletal system. Duke University, Durham, NC

2006 Development of the vertebrate musculoskeletal system: the importance of connective tissue. University of Missouri, Columbia, MO

2007 Development of the vertebrate musculature: the role of muscle and connective tissue interactions. Children's Hospital, Philadelphia, PA

2010 The role of Tcf4 and connective tissue fibroblasts in vertebrate muscle development. Developmental Biology and Stem Cell Biology Colloquium, Duke University, Durham, NC

2010 Development of the vertebrate musculature: the role of Tcf4 and connective tissue fibroblasts. Department of Physiology, University of Kentucky, Louisville, KY

2010 Muscle Development and Regeneration: the role of the connective tissue niche. Basic Sciences Seminar Series, Fred Hutchinson Cancer Research Center, Seattle, WA

2011 Muscle regeneration: the role of satellite cells and the muscle connective tissue niche. Gordon Research Conference on Myogenesis, Waterville W Valley, NH

2011 Muscle Development and Regeneration: the role of the connective tissue niche. Stowers Institute for Medical Research, Kansas City, MO

2012 What do you need to make a muscle? Interactions between muscle and its connective tissue during development and regeneration. Topics in Organogenesis, University of Michigan, Ann Arbor, MI

2013 How to make a muscle: the role of muscle stem cells and connective tissue. University of Colorado, Boulder, CO

2013 How to make a muscle: the role of muscle stem cells and connective tissue. St. Jude Children's Research Hospital, Memphis, TN

2013 How to make a muscle: the role of muscle stem cells and connective tissue. University of Rochester, Rochester, NY

2013 How to make a muscle: the role of muscle stem cells and connective tissue. University of Minnesota, Minneapolis, MN

2014 How to regenerate and maintain muscle: the role of mscle stem cells and connective tissue fibrosis. Eli Lilly, Indianapolis, IN

2015 Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. Skirball Institute, New York, NY

2015 Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. Ohio State University, Columbus, OH

2015 Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. University of Michigan, Ann Arbor, MI

2016 Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. Yale University, New Haven, CT

2016 Development of the diaphragm and congenital diaphragmatic hernias. Columbia Medical School, New York, NY

2016 Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. University of Georgia, Athens, GA

2017 Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. Mount Sinai Hospital, NY, NY.

2017 Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. UC Santa Cruz, Santa Cruz, CA.

2018 Inspired by diaphragm: diaphragm development, birth defects, and evolution. San Diego Skeletal Muscle Seminar Series, Sanford Burnham Institute, San Diego, CA

2018	Inspired by diaphragm: diaphragm development, birth defects, and evolution. University of Missouri, Columbia, MO
2018	How to develop and regenerate muscle: the role of connective tissue in guiding muscle stem cells. Cincinnati Children's Hospital Medical Center, Cincinnati, OH
2019	Inspired by diaphragm: diaphragm development, birth defects, and evolution. University of Florida, Gainesville, FL
2019	Whole or Hole? Diaphragm development, birth defects, and evolution. Washington University, St. Louis, MO.
2019	Cellular Dynamics of Muscle Regeneration. State University of New York. Stony Brook, NY
2019	Cellular Dynamics of Muscle Regeneration. Baylor University. Houston, TX
2019	Inspired by the Diaphragm, Renewed by the Satellite Cell: Recent Insights into Muscle Development and Regeneration. Sloan Kettering Institution. NY, NY.
2019	Cellular Dynamics of Muscle Regeneration. Oklahoma Medical Research Institute. Oklahoma City, OK
2020	Inspired by the Diaphragm: Development of the Diaphragm and Congenital Diaphragmatic Hernias. UCLA, Los Angeles, CA.
2020	Cellular Dynamics of Muscle Regeneration. Orthopedic Research Laboratories at Mount Sinai (virtual).
2022	Inspired by the Diaphragm: Development, Birth Defects, and Evolution of an Essential Mammalian Muscle. Duke University, Durham, NC
2023	Cellular Dynamics of Muscle Regeneration. University of Pennsylvania, Phila, PA

<u>Local/Regional</u>

2005	Muscle and muscle connective tissue development in the vertebrate limb. Brigham Young University, Provo, UT
2015	Whole or hole? Development of the diaphragm and congenital diaphragmatic hernias. Primary Children's Hospital, Salt Lake City, UT
2015	From bedrock to bench to bedside and back again. Vitae, University of Utah, Salt Lake City, UT