

**MEDICAL UNIVERSITY OF SOUTH CAROLINA
COLLEGE OF MEDICINE
CURRICULUM VITAE
MICHAEL J. KERN, PH.D.**

WORK ADDRESS

Medical University of South Carolina
Dept. of Regenerative Medicine and Cell Biology (BSB -638)
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EDUCATION:

<u>Year</u>	<u>Degree</u>	<u>Institution, Location</u>
1983	B.A (Biology)	Thomas More College, KY
1990	Ph.D. (Microbiology& Immunology) Adviser: Jerold G. Woodward, Ph.D.	University of Kentucky, KY.
1990-1994	Postdoctorate (Developmental Biology) Mentor: S. Steven Potter, Ph.D.	University of Cincinnati, OH

RELEVANT WORK EXPERIENCE:

1994	Research Associate, Program of Excellence for Heart and Lung Research, University of Cincinnati College of Medicine, Cincinnati, OH
1995-2001	Assistant Professor, tenure track, Medical University of South Carolina Department of Cell Biology and Anatomy, Charleston, SC
1995-2001	Assistant Professor, tenure track, Medical University of South Carolina Joint appointment College of Dental Medicine, Charleston, SC
1999-2005	Member Hollings Cancer Center Faculty
2001-2010	Associate Professor, tenure track, Medical University of South Carolina Department of Cell Biology and Anatomy, Charleston, SC
2001-2010	Associate Professor, tenure track, Medical University of South Carolina Joint appointment College of Dental Medicine, Charleston, SC
2007-2008	Interim Director DMD, PhD Program College of Dental Medicine, Charleston, SC
2012-2013	Director, Laboratory of Center for Oral Health Research, MUSC College of Dental Medicine, Charleston, SC
2001-2017	Director, Gene Function Core Medical University of South Carolina
2008-2017	Co-Director DMD, PhD Program College of Dental Medicine, Charleston, SC
1995-present	Full member of the College of Graduate Studies
1995-present	Full member Molecular Cellular Biology & Pathology (MCBP) Graduate Program
2011-present	Professor with tenure, Medical University of South Carolina Department of Regenerative Medicine and Cell Biology, Charleston, SC
2011-present	Professor, College of Dental Medicine, Charleston, SC MUSC Department of Oral Health Sciences
2015-present	Adjunct Professor, Clemson University School of Health Research
2017-present	Director DMD, PhD Program College of Dental Medicine, Charleston, SC

Professional Memberships

1995-present	Member, American Association for the Advancement of Science
2007-present	Member, International Association of Dental Research
2007-present	Member, American Dental Educator's Association

Honors

1983	Awarded, Academic Achievement Award from Thomas More College
1986-90	Awarded, Lucille P. Markey Pre-Doctoral Fellowship
1987	Semi-finalist, Graduate Student Poster competition of the Midwest Immunology Conference
1995	Nominated, MUSC for the Searle Scholars National Research Award
1998	Awarded, March of Dimes Basil O'Connor Starter Scholar Award
1998, 1999	Nominated, MUSC Health Sciences Teaching Excellence Award-Developing Teacher
2001	Nominated, MUSC Health Sciences Teaching Excellence Award-Lecturer and Mentor
2002	Awarded, Outstanding Teacher of the Year College of Graduate Studies MUSC
2003	Awarded, Top Ten Teacher in College of Graduate Studies MUSC
2004	Awarded, Outstanding Teacher of the Year College of Graduate Studies MUSC
2006	Nominated, MUSC Health Sciences Teaching Excellence Award-Lecturer
2008-2011	Selected, MUSC Presidential Scholars-College of Graduate Studies faculty member
2010	Awarded, MUSC College of Dental Medicine Outstanding Basic Science Professor
2010	Awarded, MUSC Health Sciences Teaching Excellence Award-Lecturer
2010	Nominated, by MUSC for SC Governor's Professor of the Year, final designation was SC Distinguished Professor.
2011	Awarded, MUSC College of Dental Medicine Outstanding Basic Science Professor
2011	Awarded, Honorary Membership into Omicron Kappa Upsilon Dental Honor Society, Chapter Zeta Eta
2013	Awarded, MUSC College of Dental Medicine Outstanding Basic Science Professor
2014-2015	Vice-President, Omicron Kappa Upsilon National Dental Honor society, chapter Zeta Eta
2015-2016	President, Omicron Kappa Upsilon National Dental Honor society, chapter Zeta Eta
2016	Nominated, MUSC Health Sciences Teaching Excellence Award-Lecturer
2017	Awarded, MUSC College of Dental Medicine Outstanding Basic Science Professor
2018	Awarded, MUSC College of Dental Medicine Outstanding Basic Science Professor
2018	Nominated, MUSC Health Sciences Teaching Excellence Award-Lecturer

FUNDING:

Active Grants

- (1) T32 DE017551 (PI **Kern MJ**) 7/01/06-6/30/21 15%
NIH/ National Institute of Dental and Craniofacial Research
TITLE: MUSC Dental Research Training Grant
This institutional training grant funds dual degree (i.e. DMD, PhD students), Ph.D. students, and Postdoctoral fellows for training in oral health research careers.

Prior funding (Chronological, oldest to most recent)

- (1) University Research Committee MUSC Institutional Award (P.I. **Kern**) 11/1/95-10/31/96
TITLE: Function of homeodomain proteins in cardiac development \$21,380 (total direct)
- (2) American Heart Association-S. Carolina affiliate Grant-in Aid (P.I. **Kern**) 7/1/97-6/30/99 30%
TITLE: The Role of the Prx2 Homeobox Gene in Cardiac Function and Cardiovascular Disease.
\$50,000 (total direct)
- (3) March of Dimes-Basil O'Connor Starter Scholar (P.I. **Kern**) 2/1/98-1/31/00 30%
TITLE: Prx Homeobox Genes: Regulators of Bone Morphogenesis \$100,000 (total direct & indirect)

- (4) MUSC Heart Research Center (P.I. **Kern**) 12/1/97-11/30/99 25%
TITLE: Prx2, a regulator of collagen and cardiac function \$149,606 (total direct)
- (5) P01 HL52813 (Program Director-Markwald, R.R.) 9/1/94-8/31/99 10%
NIH/ National Heart, Lung, and Blood Institute
TITLE: Cardiac Valvuloseptal Morphogenesis
Project II TITLE-Epithelial-Mesenchymal Interactions in Cushion Induction (P.I. Krug)
M.J. Kern was Co-I \$136,613 (year 1 direct) \$655,218 (total direct)
- (6) R01 HL56596 (P.I. **Kern**) 4/10/98-3/31/02 25%
NIH/ National Heart, Lung, and Blood Institute
TITLE: Homeobox Genes in Cardiac Development and Function \$458,997 (total direct & indirect)
- (7) URC MUSC Institutional support (P.I. **Kern**) 4/1/01-3/31/02 25%
TITLE: Illumination of Target Genes of Prx1 and Prx2 \$24,594 (total direct)
- (8) URC MUSC Interim support (P.I. **Kern**) 4/1/01-3/31/03 20%
TITLE: Homeobox Genes in Cardiac Development and Function \$50,000 (total direct)
- (9) Department of Defense-Cancer grant (P.I. Spyropoulos) 7/1/01-6/30/03 5%
TITLE: Translational Application of the Homeobox Gene Families
M.J. Kern was Co-I \$241,585 (total direct and indirect)
- (10) AHA predoctoral fellowship (P.I. Richard Peterson) 7/1/03-5/31/05 0%
TITLE: Characterizing disease implications of translational regulation of a homeobox gene in cardiac tissue (**M.J. Kern** was Ph.D. Mentor)
- (11) BAA-HL-02-3 (P.I. Knapp) 10/1/02-6/30/05 5%
Cardiovascular ProteomicsCenter Project 2
M.J. Kern was a Co-I to examine differential protein expression during cardiac development in genetically modified mice and cells derived from them. \$11,020,795 (total direct)
- (12) P20 RR016434 (PI Markwald)
NIH/ National Center for Research Resources
TITLE: SC COBRE Developmentally Based Cardiovascular Diseases
\$1,500,000 (year 1 direct) \$ 2,250,000 (total direct & indirect)
M.J. Kern was Director of Core D-Gene Function Core
\$190,000 (per year direct)
- (13) P20 RR017677-03 (P.I. Obeid) 10/1/02-6/30/07 15%
NIH/ National Center for Research Resources
TITLE: COBRE in Lipidomics and Pathobiology
\$1,043,046 (year 1 direct & indirect) \$ 7,223,813 (total direct & indirect)
M.J. Kern was Co-Director of Core C-Transgenic and Pathobiology Mouse Core
\$158,730 (year 1 direct) \$1,212,378 (total direct and indirect)

- (14) P30-RR016461 (P.I. Markwald) 7/01/05-5/31/07 10%
NIH/ National Center for Research Resources
TITLE: South Carolina IDeA Network for Biomedical Research-INBRE
M. J. Kern was a Co-I for a Stem Cell/Regenerative Medicine Core Facility. The role of the core facility was to train investigators and their personnel in using molecular and cellular techniques in studying and using stem cells in research.
- (15) F30 NIH-DE16776 NRSA (P.I. Mitchell) 4/01/05-5/30/08 0%
NIH/ National Institute of Dental and Craniofacial Research
TITLE: Role of Prx1 isoforms in craniofacial chondrogenesis
M. J. Kern was the PhD mentor for Jonathan Mitchell a DMD, PhD student on this NRSA-Predoctoral fellowship.
- (16) R03 NIH-NS056075 (P.I. Hama) 6/01/07-5/31/09 5%
NIH/ National Institute of Neurological Disorders and Stroke
TITLE: Creation of a fatty acid 2-hydroxylase-knockout mouse model
M. J. Kern was a Co-I to facilitate the gene targeting and breeding of the Fa2h conditional KO mouse. Total costs (direct and indirect) \$180,000
- (17) AHA-Grant-in-Aid 0855298E (P.I. **Kern MJ**) 7/1/08-6/30/11 10%
Alternative splicing of the Prx1 homeobox gene in VSMC
M.J. Kern was the PI to examine the cis sequences and trans acting factors that regulate Prx1 alternative splicing in vascular smooth muscle cells with the benefit of a unique minigene. Total costs (direct and indirect) \$110,000
- (18) R03 DE018741 (PI Yao) 7/01/09-6/30/11 5%
NIH/ National Institute of Dental and Craniofacial Research
Biophysical Modeling of Fluid and Solute Transport in the TMJ Disc
M.J. Kern was a Co-Investigator to facilitate the culturing and analysis of cells isolated from the TMJ of pigs to aid in developing a new multiphasic mechano-electrochemical finite element model of the temporomandibular joint. Total costs (direct and indirect) \$180,000
- (19) R01 AR47204 (P.I. Awgulewitsch) 9/1/07-8/31/12 10%
NIH/National Institute of Arthritis and Musculoskeletal Systems
TITLE: Role of Hox genes in skin and hair follicle development
M. J. Kern was a Co-I to help the team of investigators determine: 1) Hoxc13 direct target genes, 2) whether Hoxc13 and Foxq1 cooperatively regulate target genes, and 3) define Hoxc13-dependent regulatory gene networks essential for hair follicle differentiation. Total costs (indirect and direct) \$1,725,000
- (20) P01 CA097132-06 (PI Hannun) 09/01/08-8/31/13 5%
NCI/National Cancer Institute
Sphingolipids in Cancer Biology and Therapy
M. J. Kern was a Co-Investigator of an animal core facility to generate mouse models of cancer involving alterations in lipid biosynthesis or metabolism until Dr. Hannun moved his lab to Stonybrook NY in early 2012.

- (21) R01 NS060807 (PI Hama) 5/1/08-4/30/13 5%
NIH/National Institute of Neurological Sciences
TITLE: Lipid hydroxylation in glial cell signaling and myelination
M.J. Kern was a Co-I to assist with the generation of new transgenic mice and aid in the breeding of existing genetically modified mice that all involve the Fatty acid-2 hydroxylase gene and defining its participation in myelination. Total costs (indirect and direct) \$1,725,000
- (22) P30 GM103331 (PI Kirkwood) 7/1/12-6/30/15 5%
NIH/National Institute of General Medicine Sciences
MUSC Center for Oral Health Research
M.J. Kern was a Co-Investigator to supervise and administratively direct the Laboratory portion of the Center of Oral Health Research from July 2012-June 2013.
- (23) R21ES018939 (PI **Kern MJ**) 04/01/10-3/31/14 15%
NIH/National Institute of Environmental and Health Science
A Knockout/Knockin Approach to Evaluate the Function of ARNT and ARNT2 Protein
The goal of this award was to generate and characterize a genetically modified mouse that will test the molecular mechanism of the limited ability of ARNT2 to functionally compensate for ARNT. Is it due to the differences in the pattern of expression between the two loci or the amino acid differences between the two proteins? Total costs \$200,000
- (24) INBRE Pilot project (PI **M. J. Kern**) 9/1/2014-8/31/2015
TITLE: Illuminating Protein-Protein interactions of a novel Transcription Factor domain via Biacore
Total direct \$10,000
- (25) MUSC Teaching and Innovation Award (PI **M. J. Kern**) 10/1/2013-6/1/2015
TITLE: Modifying Socratic Teaching Methods with Audience Response Systems
Total direct \$2,000
- (26) R01 DE021134 (PI Yao) 3/01/12-2/28/17 15%
NIH/ National Institute of Dental and Craniofacial Research
Integrating biomechanics and cell biology to understand TMJ pathology
M.J. Kern was a Co-Investigator to facilitate and troubleshoot the utilization of TMJ disc cells, design experiments using TMJ disc cells, and interpret the data from a variety of culture experiments analyzing TMJ disc cell function.
- (27) P30 GM103342 (PI Markwald) 4/1/12-3/30/17 10%
NIH/ National Center for General Medicine
TITLE: SC COBRE for Cardiovascular Disease
\$750,000 (year 1 direct) \$ 1,125,000 (total direct & indirect)
M.J. Kern was Director of Core D-Gene Function Core \$190,000 (per year direct)
- (28) R13 DE025171 (PI **M. Kern**) 08/01/2015-7/30/2017 5%
NIH/National Institute of Dental and Craniofacial Research
TITLE: Developmental Disorders of the Dentition: Abnormalities of Tooth Number
\$30,000 (total)
This award was to provide support to put on a one-day symposium associated with the 2016 annual joint meeting of the Special Care Dentistry Association and the International Association for Disabilities and

Oral Health. The purpose was to promote timely transfer of research knowledge and its implications to clinicians who care for those with dental abnormalities. It was very successful with over 100 attendees.

- (29) R01 HL121382 (PI Kern C.) 10/1/14-6/30/18 5%
NIH/National Heart Lung and Blood Institute
TITLE: Proteoglycan Regulation During Cardiac Valve Development And Homeostasis
\$250,000 (year 1 direct) \$1,500,000 (total direct & indirect)
M.J. Kern was Co-I on this application to facilitate the use of genetically modified mice in the examination of cardiac valve development.

MUSC ACADEMIC COMMITTEE ACTIVITIES:

University Research Committee for grant review (MUSC)
Member (2000-2002)
Ad hoc reviewer- twelve grants (1995-2003)
Subcommittee chairman- three grants (1996, 1997, 2001)
Transgenic Facility Advisory Committee member and chairman (Feb. 1997 to 2009)
Gene Targeting Facility Advisory Committee member and chairman (Feb. 1997 to 2009)
Graduate School Honor Council (faculty adviser/voting member Fall 1997)
MCBP PhD Student Written Qualifying Examination committee member 1998, 1999, and 2000
Cell Biology and Anatomy Graduate Student Selection Committee (member 1998 and 1999)
Medical Scientist Training Program NIH Site visit participant May 1998 (grant funded)
Mission Based Management Junior Faculty Committee-member (1999-2000)
Mission Based Management Education Committee-member (1999-2000)
Search Committee-Dean of the College of Graduate Studies member (2000)
Graduate School first year Common Curriculum Committee member (2000-2004)
MUSC College of Graduate Studies, Graduate Council member (2001-2004)
Department of Cell Biology and Anatomy Graduate Studies Coordinator (2001-2004)
LCME accreditation College of Medicine site visit participant Jan 2005
Graduate School First Year Curriculum Progress Committee-member (2002-2004)
MCBP Executive Committee-member (2001-2010)
MCBP Associate Director (June 2002-2007)
MCBP Academic Progress Committee-member (2002-2010)
Steering Committee NSF GAANN grant (PI Halushka) member (2004-2010)
Steering Committee T32 Cardiovascular Training grant (PI Menick) member (2004-2010)
Steering Committee T32 MUSC Dental Training grant (PI London) member (2006-2007)
Steering Committee T32 SPCTR Clinical Master degree program (2007-2010)
MUSC University Research Council-member (2004-2009)
Subcommittee on core facilities member (2004-2005)
MUSC University Distinguished Faculty Service Awards Committee-member (2012)
MUSC University Teaching Excellence Awards Selection Committee-
chair (2011 & 2012), member (2013-**2018**)
MUSC University Faculty Hearing Committee (2012-2015)
OKU National Dental Honor society MUSC chapter, executive committee
Secretary 2013-2014
Vice Pres. 2014-2015
President 2015-2016

MUSC College of Dental Medicine Accreditation Committees: Basic Science, Research, Admissions (2016-2017) Accreditation granted with no problems
MUSC College of Dental Medicine Admissions Committee-member (2007-**present**)
MUSC Dental Scientist Admissions Committee member & primary recruiter (2007-**present**)
MUSC College of Dental Medicine Student Academic Performance and Professionalism Committee (2009-**present**)
MUSC College of Dental Medicine Academic Promotion and Tenure Committee (2012-**present**)
MUSC College of Graduate Studies, Graduate Council member (2012-**present**)
MUSC Steering Committee Medical Scientist Training Program-member (2010-**present**)
MUSC Medical Scientist Training Program Admissions Committee- member (2010-**present**)
MUSC Department of Regenerative Medicine and Cell Biology Promotion and Tenure Committee-member (2012-**present**)
MUSC College of Dental Medicine Technology Committee member (2014-**present**)
MUSC College of Dental Medicine Curriculum Committee member (2017-**present**)
MUSC College of Dental Medicine Curriculum Committee, Subcommittee INBDE (2018-**present**)

TEACHING ACTIVITIES

Teaching assistant for the following courses at the University of Kentucky (1985-1988):

BIO 109 Microbiology Lab (two semesters ~60 students each semester)

BIO 585 Pathogenic Bacteriology Lab (one semester ~30 students)

MMI 595 Immunology Lab (one semester ~20 students)

Participated in Faculty Development Conference on Teaching hosted by the Apple Tree Society of MUSC and the College of Medicine. This two-day program focused on improving teaching and presentation skills in both large and small group settings. March 1995

Foundations in Cellular and Molecular Biology,

MUSC College of Graduate Studies (4 credit hrs) ~25 students per year

FALL 1996 4 lectures

FALL 1997-2000 same 6 lectures each year

Embryology, MUSC Medical School (3 credit hrs) ~125 students

FALL 1997-1998 1 lecture each year on limb development

Molecular Genetics, MUSC College of Graduate Studies (3 credit hrs) ~25 students per year

Spring 1998-2001 same 3 lectures each year

STOM-876: Bioinformatics and Molecular Stomatology, MUSC Dental School (3 credit hrs)

Fall 2002 2 hr lecture (regulation of gene expression)

PHMPR-620 Anatomy and Histology, College of Pharmacy ~80 students

Fall 2003-2005 same 2 hrs lecture each year on lymphoid system

MCBP723: Advanced Cell Biology (3 credit hr selective for First Year Curriculum)

MUSC College of Graduate Studies (3 credit hrs) ~8 students

Spring 2005 2 hours of lecture, 3 hours of small group sessions, grading oral presentations and grading written finals

Developmental Biology-MUSC College of Graduate Studies (3 credit hrs) ~10 students

Fall 2002- 2 hours of lecture

Fall 2005- 2 hours lecture and grading oral presentations

CGS-701 Foundations of Biomedical Science “First Year Curriculum”

Regulation of Gene Expression, MUSC College of Graduate Studies (1 credit hour) ~35 students

Fall 2001-02 6 lectures and 12 hours of flextime “Regulation of Gene Expression”

Unit Director “Regulation of Gene Expression”

Fall 2003- 8 lectures and 16 hours of flextime “Regulation of Gene Expression”

Unit Director “Regulation of Gene Expression”

Spring 2005 1.5 hour lecture “Regulation of Gene Expression” Unit

CELL-629 Medical Gross Anatomy, MUSC Medical School (9 credit hours) ~125 students

Fall 2008 2 lectures (limb development)

CELL-609: Medical Histology and Embryology, MUSC Medical School (9 credit hrs) ~125 students

Spring 2000 & 2001 2 lectures each year (immune system)

Spring 2002-2003 2 lectures each year (limb development)

Spring 2004, 2005 2 lectures (limb development) and 2 Small Group Conferences each year

Spring 2006 2 lectures (limb development) and 6 Small Group Conferences

Spring 2007 7 lectures and 9 small group conferences

Spring 2008 7 lectures (limb dev, respiratory, and lymphoid topics)

Spring 2009 5 lectures (respiratory and lymphoid topics)

CELL-628. Basic & Oral Histology, Organ Micro-Anatomy, & Embryology

MUSC College of Dental Medicine (8.5 credit hour course)

~55 students per year 1996-2009, ~70 students per year 2010-present

FALL 1996- 3 lectures + 91 hrs teaching in small group lab sessions

FALL 1997- 5 lectures + 91 hrs teaching in small group lab sessions

FALL 1998- 8 lectures + 91 hrs teaching in small group lab sessions

FALL 1999-2003 each year 9 lectures + 91 hrs teaching in small group lab sessions

FALL 2004& 2005 Co-course Director 13 lectures + 95 hrs teaching in small group lab sessions

(Total 154 contact hours)

FALL 2006&2007 Course Director 18 lectures + 95 hrs teaching in small group lab sessions

(Total 154 contact hours)

FALL 2008&2009 Course Director 20 lectures + 95 hrs teaching in small group lab sessions

(Total 154 contact hours)

FALL 2010-2012 Course Director 25 lectures + 95 hrs teaching in small group lab sessions

(Total 154 contact hours)

FALL 2013 Course Director 28 lectures + 95 hrs teaching in small group lab sessions

(Total 154 contact hours)

FALL 2014 Course Director 29 lectures + 95 hrs teaching in small group lab sessions

(Total 154 contact hours)

FALL 2015 Course Director 30 lectures + 95 hrs teaching in small group lab sessions

(Total 154 contact hours)

FALL 2016, 2017, and 2018 same as above

OHS-823 (name previously PEDOR-823 prior to 2016) Clinical Genetics
MUSC, College of Dental Medicine (1 credit hour)
~75 students per year
Lecturer: Multifactorial Inheritance (1 hour) Fall 2009, 2011, 2014
FALL 2015 Course Director and major lecturer (12 hrs)
FALL 2016 Co-Course Director and major lecturer (9 hrs)
FALL 2017 Co-Course Director and major lecturer (7 hrs)
FALL 2018 Course Director and major lecturer (12 hrs)

CGS 761 Summer Undergraduate Research lecture series
MUSC, College of Graduate Studies (3 credit hours)
~60 students per year
Lecturer: Tooth Development (1 hour) each summer 2011-2016
Craniofacial Anomalies (1 hour) summer 2015, 2016
Limb development and Homeobox Genes (1 hour) each summer 2002-2017

STOMA-861: Graduate Dental Core for Residents
MUSC, College of Dental Medicine (2 credit hour) ~12 students per year
Lecturer: Tooth Development (2 hours) each Spring 2011-2018
Lecturer: Craniofacial Development (2 hours) each Spring 2011-2018

Apple Tree presentations:

Roundtable presenter in Apple Tree “Best Practices” series Jan 2013
Lecturer in Apple Tree Series: "Getting Ready To Teach" April 2013, November 2014, Feb 2016
Lecturer: “Clickers: An Analysis of Effectiveness and Student Interest”
Lecturer: “Audience Response System: Implementation, Experimentation, & Tutorial” Sept 2015
Lecturer: “Alternative Assessments” in Foundations in Teaching and Learning March 2018

Participated in South Carolina Conference on Innovations in Teaching and Learning in Higher Education MUSC campus July 14th 2017 to learn more about how to teach effectively.

Student Research Day-Judge (Oral Presentations) Nov. 1997, 2002-06, 2009-12, 2014, 2016, 2017
Student Research Day-Judge (Poster Presentations) Nov. 1998, 2000, 2001, 2007, 2008, 2013

MUSC CDM Scholar’s Day judge 2012-2018

Ph.D. and M.S. Dissertation Major Adviser:

1995-2000	Russell “Chip” Norris, Ph.D. dissertation project “Identifying and characterizing downstream targets of the Prx transcription factors during heart morphogenesis.”
1996-2000	Karen K. Scott, M.S. thesis project “Prx1 & 2 regulation of collagen I alpha 1”
1998-2002	Elizabeth Chesterman, Ph.D. dissertation project “Expression analysis of Prx1 and Prx2 homeodomain proteins leads to the identification of internal ribosomal entry site in Prx1 transcripts”
2001-2005	Richard E. Peterson, Ph.D. dissertation project “Antagonism of Prx1 homeobox gene isoforms during Chondrogenesis”
2006-2007	Tara Burns, Ph.D. dissertation project “Molecular regulation of alternative splicing of Prx1 primary transcripts: impact on chondrogenesis and smooth muscle cells” decided to change labs and completed PhD in another lab.

2001-2008 Jonathan M. Mitchell, DMD, Ph.D. Dissertation project “Role of Prx homeoproteins in craniofacial patterning and chondrogenesis”

Thesis Committee Member,
Ph.D. students at MUSC

Brian Necella MCBP program (defended Ph.D. dissertation April 2000)
Russell “Chip” Norris MCBP program (defended Ph.D. dissertation Dec 2000)
Elizabeth Chesterman MCBP program (defended Ph.D. dissertation May 2002)
Michelle Hairfield MCBP program (defended Ph.D. dissertation Oct 2002)
Chris Willey MSTP program (defended Ph.D. dissertation Dec 2002)
Richard Peterson, MCBP program (defended Ph.D. dissertation March 2005)
Peter Wieckowski, MCBP program (defended Ph.D. dissertation Feb 2007)
Nathan Alderson, Biochemistry department (defended Ph.D. dissertation April 2007)
Laura Spruill, MSTP program (defended PhD dissertation April 2007)
Jonathan Mitchell, MCBP (DSTP) (defended dissertation April 2008)
Millie Embree, MCBP (DSTP) program (defended dissertation January 2010)
Chris Potter, MCBP program (defended dissertation January 2010)
Nathaniel Pruett, MCBP program (defended dissertation September 2011)
Jonathan Kuo, MUSC-Clemson program (defended dissertation March 2012)
ChangCheng Shi “Andy”, MUSC-Clemson program (defended dissertation July 2012)
Alfred Griffin III, MCBP (DSTP) program (defended dissertation Jan 2014)
Haley Buff Lindner, MCBP (DSTP) program (defended dissertation Jan 2015)
Greg Wright, MUSC-Clemson program (defended dissertation Feb 2015)
Bethany Herbert, MCBP (DSTP) program (defended dissertation May 2016)
Sarah Cisewski, MUSC-Clemson program (defended dissertation June 2016)
Emily Durham, MUSC MCBP (passed oral qualifier October 2016)
Alexandra Rogers, MCBP DSTP (passed oral qualifier Feb 2018)

Masters students at MUSC

Jennifer Holmes Department of Biochemistry (defended M.S. thesis August 1997)
Ken D’Arrigo MCBP program (defended M.S. thesis January 1998)
Nickos Davarinos Department of Biochemistry (defended M.S. thesis January 2000)
Lisa Norman MCBP program (defended M.S. thesis February 2000)
Karen Kubitz Scott MCBP program (defended M.S. thesis June 2000)
E. Richard Barbour, Department of Biochemistry (defended M.S. thesis Sept. 2000)
Christine Fieber-Brown, MCBP program (defended M.S. thesis April 2004)
Jessica Paulk Petersen, MCBP program (defended M.S. thesis March 2005)
Sangeetha Chandrasekaran, MCBP program (defended M.S. thesis March 2006)

Summer Student Research Fellowship Trainees

Cuyler “Ray” Brown, Dental School first year student in lab summer 1999
Allyson Varn, Dental School first year student in lab summer 2000
Georgina Gainey, Dental School first year student in lab summer 2000
David Norrington, Dental School first year student in lab summer 2001
Amy Cooper, Dental School first-year student in lab from summer 2002
Kevin Kelleher, Dental School first-year student in lab summer 2002
David Hicklin, Dental School first-year student in lab summer 2003
Paul Doughty, Dental School first-year student in lab summer 2004

James Dickert, Dental School first-year student in lab summer 2005
Shea Tolbert, Dental School first-year student in lab summer 2005
Dan Pennella, Dental School first-year student in lab summer 2006
Kathryn Glen, Medical School first-year student in lab summer 2008
R. William Pratt, Dental School first-year student in lab summer 2008
Daniel West, Dental School first-year student in lab summer 2009
Bryan Wingate, Dental School first-year student in lab summer 2010
Charlie Moore, Dental School first-year student in lab summer 2011
Caitlin Biggs, Dental School first-year student in lab summer 2011
Daniel Hall, Dental School first-year student in lab summer 2012
Mallory Ulmer, Dental School first-year student in lab summer 2013
David Thorup, Dental School first-year student in lab summer 2014
Richard “Sims” Tompkins, Dental School first-year student in lab summer 2015
James Tankersley, Dental School first-year student in lab summer 2015

Undergraduate Students

David Hicklin, Junior from Furman University in lab summer 2001
Ebony Hilton, Junior from College of Charleston in lab summer 2003
Jonathan Hunter Hicklin, Junior from Furman University in lab summer 2004
Benjamin Jeter, Junior from Clemson University in lab summer 2005
Alison Baraty, Junior from Clemson University in lab summer 2007
Kamryn Kant, Junior from College of Charleston in lab summer 2012 & 2013
Eduardo Lopez, Junior from College of Charleston in lab summer 2014

High School Students

Amy Scott, Senior High School Research Thesis, Advisory committee member for Amy Scott, joint project with Dr. Kenneth Hewett and Dr. Michael Kern MUSC for the Academic Magnet School 1995-96.
Sara Khalil, Governor’s school junior in lab during summer of 2006
Joey Busher, Fall internship 2014

Laboratory Research Rotation of MUSC students

Russell “Chip” Norris MCBP graduate student (Fall 1995)
Karen Kubitz Scott MCBP graduate student (Fall 1996)
Albert Sun, MSTP program (Summer 1997)
Elizabeth Chesterman, MCBP graduate student (Spring 1998)
Richard E. Peterson, MCBP graduate student (Spring 2001)
Arun Pallanisamy, MCBP graduate student (Spring 2002)
Jamie Lee, MSTP program graduate student (Summer 2003-Spring 2005)
Chris Potter, MCBP graduate student (Spring 2004)
Priyasma Bhoumik, MCBP graduate student (Spring 2005)
Tara Burns, first year student (Fall 2005-Fall 2007)
Erika Kullberg, first year student (Spring 2006)
Katie Cribben, first year student (Fall 2009)

Academic and Service Accomplishments of My Students

Invited lecture Russell “Chip” Norris,
Developmental Biology meeting of Medical College of Georgia (April 1998)

- First place award to Russell “Chip” Norris PhD III category Poster presentation,
MUSC student research day (Nov. 1998)
- Graduate Student Association, elected member (1995-1999), treasurer (1997, 1998)
Russell “Chip” Norris
- Second place award to Karen Kubitz Scott PhD II category Poster presentation,
MUSC student research day (Nov. 1998)
- Graduate Student Association, elected member (1997-1998), secretary (1997)
Karen K. Scott
- Graduate Student Association, elected member (1998-present), secretary (1999), vice-president
(2000-2002) Elizabeth Chesterman
- First place award to Elizabeth Chesterman PhD III category Poster presentation,
MUSC student research day (Nov. 2001)
- Kinard-Gadsden award to Elizabeth Chesterman for best poster at MUSC Student Research Day
(Nov 2001)
- First place award to Jonathan Mitchell Clinical Professional poster category,
MUSC student research day (Nov. 2001)
- Second place award to David Norrington Clinical Professional Oral presentation MUSC student
research day (Nov. 2001)
- Third place award to Allyson Varn and Georgina Gainey Third Year MUSC Dental School
Conference (Feb. 2002)
- Invited lecture David Norrington, International Association of Dental Research Conference,
San Diego (March 2002)
- American Heart Association Pre-doctoral fellowship to Rick Peterson (June 2003)
- First place award Ebony Hilton South Carolina Association of Minority Participants (Aug 2003)
- First place award to David Hicklin Clinical Professional oral presentation category,
MUSC Student Research day (Nov. 2003)
- First place award Poster competition Rick Peterson American Association of Anatomists
National meeting Washington DC FASEB meeting (April 2004)
- Travel Award to Jonathan Mitchell for the International Developmental Biology (July 2004)
- Provost Scholarship MUSC Kevin Kelleher (June 2004)
- Second Place Award SRD Nov. 2004 Paul Doughty Clinical Professional Poster presentation
- Sarnat Award for First Place in the Poster Competition of the Craniofacial Biology Group at the
IADR/AADR meeting WashingtonDC (March 2005) Jonathan Mitchell
- Second place award Richard Peterson “Langman Competition for best Oral Presentation”
American Association of Anatomists National meeting San Diego, CA (April 2005)
- NRSA Pre-doctoral fellowship to Jonathan Mitchell (April 2005)
- American Association of Dental Research AADR Travel Award/ Fellowship to Jonathan
Mitchell (June 2005)
- First place award to Tara Burns Ph.D. first year Poster category,
MUSC student research day (Nov. 2006)
- First Place award to Shea Tolbert & Jay Dickert, MUSC Student Research Day Presentation
(March 2007)
- Third place award to Sara Khalil SC Junior Academy of Science (March 2007)
- Second Place award Dan Pennela, MUSC Student Research Day Presentation (Feb 2008)
- Second Place award Mallory Ulmer, MUSC Student Research Day Presentation (Nov 2013)
- Third place Award Mallory Ulmer, Dental Scholar’s Day (Feb 2015)

INVITED LECTURES/PLATFORM PRESENTATIONS (selected):

Program of Excellence Heart and Lung Molecular Biology Meeting (Baltimore, MD. May 1992)
University of Alabama Birmingham, Dept. of Veterinary Sciences (Birmingham, AL. June 1994)
Weinstein Cardiovascular Developmental Biology Meeting (Rochester, NY. June 1995)
Pediatric Cardiology group (MUSC June 1995)
University of South Carolina, Department of Developmental Biology (Columbia, SC. Feb. 1997)
Developmental Biology meeting, Medical College of Georgia (Augusta, GA. April 1997)
8th annual SC Statewide Biology Conference (Wild Dunes, SC. Jan. 1999)
Medical University of South Carolina, Department of Endocrinology (Sept 2001)
Cardiovascular Developmental Biology Symposium (March 2002)
Hollings Cancer Center (June 2004)
University of Illinois Chicago Dental School (Dec 2008)
American Association of Dental Research Platform presentation (San Diego, CA March 2010)
American Association of Dental Research Platform presentation (Charlotte, NC March 2014)

POSTER PRESENTATIONS (selected):

Molecular Biology of the Cardiovascular System (Keystone, CO. March 1996)
American Heart Association (New Orleans, LA. Nov. 1996)
6th annual SC Statewide Biology Conference, Russell "Chip" Norris, (Wild Dunes, SC. Jan. 1997)
Weinstein Cardiovascular Developmental Biology meeting (Cincinnati, OH. June 1997)
Developmental Biology meeting of Medical College of Georgia (Augusta, GA. April 1997)
7th annual SC Statewide Biology Conference, Russell "Chip" Norris (Wild Dunes, SC. Jan. 1998)
Human Genome program: Applications to Cardiovascular Biology (San Diego, CA. March 1998)
Cell Biology meeting Washington, DC, Russell A. Norris (Dec. 1999)
Cell Biology meeting Washington, DC, Karen Kubitz Scott (Dec. 1999)
MUSC student research day, Elizabeth S. Chesterman (MUSC Nov. 2000)
Cell Biology meeting San Francisco, Elizabeth S. Chesterman (Dec. 2000)
Weinstein Cardiovascular Developmental Biology meeting (Dallas, TX June 2001)
HCC Research Retreat (Wild Dunes, SC. Aug. 2001)
MUSC student research day, Elizabeth S. Chesterman (MUSC Nov. 2001) First place award
MUSC student research day, David Norrington (MUSC Nov. 2001) Second place award
MUSC student research day, Kevin Kelleher (MUSC Nov. 2002)
MUSC student research day, Amy Cooper (MUSC Nov. 2002)
Weinstein Cardiovascular Developmental Biology Meeting (Boston, MA May 2003)
MUSC student research day, David Hicklin (MUSC Nov. 2003) First place award
MUSC student research day, Jonathan Mitchell (MUSC Nov. 2003)
MUSC student research day, Richard Peterson (MUSC Nov. 2003)
International Association of Dental Research David Hicklin Hawaii (Feb 2004)
International Association of Dental Research Jonathan Mitchell Hawaii (Feb 2004)
FASEB/AAA Richard Peterson Washington, DC (April 2004)
International Association of Developmental Biology Calgary, Canada (June 2004) Jonathan Mitchell
MSTP Retreat Jonathan Mitchell (Aug 2004)
MUSC student research day, Paul Doughty (MUSC Nov. 2004) Second place award
MUSC student research day, Jonathan Mitchell (MUSC Nov. 2004)
MUSC student research day, Richard Peterson (MUSC Nov. 2004)
HCC Research Retreat, MJK (The Citadel Nov 2004)
International Association of Dental Research Baltimore (Feb 2005)

Gordon Research Conference (July 2005)
MUSC student research day, Jay Dickert (MUSC Nov. 2005)
MUSC student research day, Shea Tolbert (MUSC Nov. 2005) oral presentation
IDEA/COBRE National meeting WashingtonDC (July 2006)
MUSC student research day, Tara Burns (MUSC Nov. 2006)
MUSC student research day, Dan Pennella (MUSC Nov. 2006)
International Association of Dental Research San Francisco (July 2007)
MSTP/DMSTP retreat Jonathan Mitchell (Aug 2007)
MUSC student research day, Alison Baraty (MUSC Nov. 2007)
International meeting of Bone and Mineral Research (Hawaii Nov 2007)
International Association of Dental Research (Miami, April, 2009)
MUSC Student Research Day, Daniel West 2009
MUSC Student Research Day, Bryan Wingate 2010
MUSC CDM Scholar's Day, Daniel West, 2011
MUSC Student Research Day, Charlie Moore 2011
MUSC Student Research Day, Caitlin Biggs 2011
MUSC CDM Scholar's Day, Bryan Wingate, 2012
International Association of Dental Research (Seattle, WA 2013)
American Dental Educator's Association (Boston, MA March 2015)

EXTRAMURAL PROFESSIONAL ACTIVITIES:

Organizer of the Developmental Biology meeting, Medical College of Georgia April 1997
Member, American Dental Association National Board Part 1 Test Construction Committee
Anatomical Sciences Section 2011-2015

Symposium chair

American Association of Dental Research Platform presentation (San Diego, CA March 2010)
American Association of Dental Research Platform presentation (Charlotte, NC March 2014)

Ad hoc reviewer -Journals

Journal of Cell and Tissue Research June 1995
Developmental Dynamics March 1998
DNA Sequence Journal May 2001
Circulation Research Nov 2001 and Jan 2003
Biochemistry March 2002
Anatomical Record Aug 2002 and April 2005
Journal of Histochemistry and Cytochemistry Aug 2002
Journal of Biological Chemistry June 2004
Journal of Dental Research Feb 2007
PLOS One May 2013, May 2015, June 2015
Archives of Oral Biology Jan 2017

Ad hoc reviewer -Grants

National Science Foundation March 1996
University of Louisville-Jewish Hospital intramural grant June 1998
VA February 2000, August 2000, August 2001
AHA March 2002

NIH Special Emphasis Panel COBRE Phase III Nov 2013
NIH Special Emphasis Panel COBRE Phase III Oct 2015
NIH Special Emphasis Panel COBRE Phase III Oct 2016

PUBLICATIONS:

Manuscripts:

1. **Kern, M.J.**, Stuart, P.M., Omer, K.W. and Woodward, J.G. Evidence that IFN-gamma does not affect MHC class II gene expression at the posttranscriptional level in a mouse macrophage cell line. *Immunogenetics* 30:258-265, 1989.
2. **Kern, M.J.** and Woodward, J.G. The same CCAAT box-binding factor binds to the promoter of two coordinately regulated major histocompatibility complex class II genes. *Molecular Cellular Biology* 11:578-581, 1991.
3. **Kern, M.J.**, Witte, D.P., Valerius, M.T., Aronow, B.J. and Potter, S.S. A novel murine homeobox gene isolated by a tissue specific PCR cloning strategy. *Nucleic Acids Res.* 20:5189-5195, 1992.
4. **Kern, M.J.**, Argao, E.A., Birkenmeier, E. Rowe., L., Potter, S.S. Genomic organization and chromosomal localization of the murine homeobox gene, *Pmx*. *Genomics* 19:334-340, 1994.
5. **Kern, M.J.**, Argao, E.A., Potter, S.S. Tutorial in Molecular Biology: Homeobox Genes and Heart Development. *Trends in Cardiovascular Medicine* 5:47-54, 1995.
6. Argao, E.A., **Kern, M.J.**, Branford, W.W., Scott, W.J. Jr., and Potter, S.S. Malformations of the heart, kidney, palate, and skeleton, in alpha MHC-*Hoxb-7* transgenic mice. *Mechanisms of Development.* 52: 291-303, 1995.
7. Lu, Mei-Fang, Lacy, A. R., **Kern, M.J.**, Argao, E.A., Potter, S.S., Olson, E.N, and Martin, J.F. *Paired-*related homeobox genes cooperate in handplate and hindlimbzeugopod specification. *Developmental Biology* 205:145-157, 1999.
8. Lu, Mei-Fang, Cheng,Hui-Teng, **Kern, M.J.**, Potter, S.S., Tran, B., Diekwisch, T.G.H., Olson, E.N, and Martin, J.F. *Prx1* functions cooperatively with another paired related homeobox gene, *Prx2*, to maintain cell fates within the craniofacial mesenchyme. *Development* 126:495-504, 1999.
9. Bergwerff, M., Gittenberger-de Groot, A.C., Wisse, L.J., DeRuiter, M.C. Wessels, A., Martin, J.F., Olson, E.N., and **Kern, M.J.** Altered morphology of the great arteries and ductusarteriosus in *Prx1* and *Prx1/Prx2*-combined gene targeted mice. *Virchows Archives* 436:12-19, 2000.
10. Norris, R.A., Scott, K.K., Moore, C.S., Stetten, G., Brown, C.R., Jabs, E.W., Wulfsberg, E.A., Yu, J., and **Kern, M.J.** Human PRRX1 and PRRX2 genes: cloning, expression, genomic localization, and exclusion as disease genes for Nager syndrome *Mammalian Genome* 11:1000-1005, 2000.
11. Norris, R.A. and **Kern, M.J.** Identification of domains mediating transcription activation, repression and inhibition in the paired related homeobox protein Prx2 (S8). *DNA and Cell Biology* 20: 89-99, 2001.
12. Norris, R.A. and **Kern, M.J.** The identification of Prx1 transcription regulatory domains provides a mechanism for unequal compensation by the *Prx1* and *Prx2* loci. *J. Biological Chemistry* 276:26829-26837, 2001.
13. Mjaatvedt C. H. .Nakaoka, T., Moreno, R., Norris, R.A., **Kern, M.J.**, and RR. Markwald. The outflow tract of the heart is recruited from a novel heart forming field. *Developmental Biology* 238:97-109, 2001.
14. Chesterman, E.S., Gainey, G.D., Varn, A.C., Peterson, R.E., and **Kern, M.J.** Investigation of Prx1 protein expression in mice provides evidence for conservation of cardiac post-transcriptional regulation in vertebrates. *Developmental Dynamics* 222:459-470, 2001.
15. Chesterman, E.S and **Kern, M.J.** Comparative analysis of Prx2 and Prx1 expression in mice provides evidence for incomplete compensation. *Anatomical Record* 266:1-4, 2002.

16. Scott, K. K., R. A. Norris, S. S. Potter, D. W. Norrington, M. A. Baybo, Hicklin, D.M., and **Kern, M. J.** GeneChip microarrays facilitate identification of Protease nexin 1 as a target gene of Prx2 (S8) homeoprotein. *DNA and Cell Biology* 22:95-105, 2003
17. McKean DM, Sisbarro L, Ilic D, Kaplan-Albuquerque N, Nemenoff R, Weiser-Evans M, **Kern MJ**, Jones PL. FAK induces expression of Prx1 to promote tenascin-C-dependent fibroblast migration. *J Cell Biology*. 161(2):393-402. 2003.
18. Peterson, R. E, Hoffman, S., and **Kern M.J.** Opposing roles of two isoforms of the Prx1 homeobox gene in chondrogenesis. *Developmental Dynamics* 233(3):811-821. 2005.
19. Mitchell, J.M., Hicklin, D.M., Doughty, P.M., Hicklin, J.H., Peterkova, R., and **Kern, M.J.** The Prx1 homeobox gene is critical for molar tooth patterning. *J. Dental Research* 2006 Oct;85(10):888-93. PMID: 16998126
20. Potter, C. S., Peterson, R. L., Barth, J. L, Pruetz, N.D., Jacobs, D.F., **Kern, M.J.**, Argraves, W.S., Sundberg, J.P., and Awgulewitsch, A. Evidence that the Satin Hair Mutant Gene *Foxq1* is among Multiple and Functionally Diverse Regulatory Targets for *Hoxc13* during Hair Follicle Differentiation. *J. Biological Chemistry* 2006 Sep 29;281(39):29245-55.PMID: 16835220
21. Alderson N.L., Maldonado E.N., **Kern M.J.**, Bhat N.R., Hama H. FA2H-dependent fatty acid 2-hydroxylation in postnatal mouse brain. *J Lipid Res*. 2006 Dec;47(12):2772-80. PMID: 16998236
22. Chapados R., Abe K., Ihida-Stansbury K., McKean D., Gates A.T., **Kern M.J.**, Merklinger S., Elliott J., Plant A., Shimokawa H., and Jones P.L. ROCK controls matrix remodeling in pulmonary hypertension. *Circulation Res*. Oct 2006; 99: 837 – 844. PMID: 16990566
23. Jin J., **Kern M.J.**, Otey C.A., Wamhoff B.R., and Somlyo A.V. Angiotensin II, FAK and PRX enhance smooth muscle expression of LPP and a newly identified LPP binding partner palladin to promote cell migration. *Circulation Res*. 2007 Mar 30; 100(6):817-25. PMID: 17322171
24. Higuchi T., Bartel F.O., Masuya M., Deguchi T., Henderson K.W., Li R., Muise-Helmericks R.C., **Kern M. J.**, Watson D.K., and Spyropoulos D.D. Thymomegaly, Microsplenia and Defective Homeostatic Proliferation of Peripheral Lymphocytes in p51-Ets1 Isoform-Specific Null Mice. *Molecular Cellular Biology* 2007 May;27(9):3353-66. PMID: 17339335
25. Norris RA, Potts JD, Yost MJ, Junor L, Brooks T, Tan H, Hoffman S, Hart MM, **Kern MJ**, Damon B, Markwald RR, Goodwin RL. Periostin promotes a fibroblastic lineage pathway in atrioventricular valve progenitor cells. *Dev Dyn*. 2009 Mar 30;238(5):1052-1063. PMID: PMC2886283
26. Gruber H., Norris R.A., **Kern M.J.**, Hoelscher G., Ingram J., Zinchenko N., Hanley Jr. E. Periostin Localization in the Intervertebral Disc. *Biotech Histochem*. 2010 Apr 6. PMID: 20370359
27. Lu X., Beck G. R., Gilbert L. C., Camalier C. E., Bateman N. W., Hood B. L., Conrads T. P., **Kern M. J.**, You S., Chen H., and Nanes M. S.. Identification of the Homeobox Protein, Prx1 (MHox), as a Regulator of Osterix Expression and Mediator of TNF Action. *J Bone Miner Res*. 2011 Jan 26: 209-19. PMID: PMC3179318
28. Kuo J., Shi C., Cisewski S., Zhang L., **Kern MJ**, Yao, H. Regional Cell Density Distribution and Oxygen Consumption Rates in Porcine TMJ Discs: An Explant Study *Osteoarthritis and Cartilage* 2011 19:911-8 PMID: PMC3132219
29. Potter KA, **Kern MJ**, Fullbright G, Bielawski J, Scherer SS, Yum SW, Li J, Cheng H, Venkata JK, Khan AA, Hama H. Central nervous system dysfunction in a mouse model of FA2H deficiency *Glia* 2011 59:1009-10021 PMID: PMC3094470
30. Potter CS, Pruetz ND, **Kern MJ**, Baybo MA, Doowin AR, Potter KA, Peterson RL, Sundberg JP, Awgulewitsch A. The nude mutant gene *Foxn1* is a HOXC13 regulatory target during hair follicle and nail differentiation. *J. Invest. Dermatology* 2011 131: 828-837. PMID: PMC3059342
31. Pruetz ND, Hajdu Z, Zhang J, Visconti RP, **Kern MJ**, Wellik DM, Majesky MW, Awgulewitsch A. Changing topographic Hox expression in blood vessels results in regionally distinct vessel wall remodeling. *Biology Open* 2012 May 15;1(5):430-5. PMID: PMC3507213.

32. Griffin AC, **Kern MJ** and Kirkwood KL. MKP-1 is Essential for Canonical Vitamin D-induced Signaling through Nuclear Import and Regulates RANKL Expression and Function *Molecular Endocrinology* 2012 26:1682-93. PMID: PMC3458222
33. Sugi Y, **Kern MJ**, Markwald RR, and Burnside JL. Periostin expression is altered in Aortic valves in Smad6 mutant mice. *Journal of Neonatal Biology* 2012 Jan 21;1. pii: 4692. PMID: PMC4224111
34. Claussnitzer M, Klocke B, Dankel SN, Grallert H, Berulava T, Lee H, Hansson O, Glunk V, Ehlers K, Wahl S, Hoffmann C, Bretschneider N, Rönn T, Skurk T, Horsthemke B, DIAGRAM+ Consortium, Spieler D, Klingenspor M, Mellgren G, **Kern MJ**, Groop L, McCarthy M, Hauck SM, Illig T, Seiffert M, Hauner H, Laumen H. Empowering genetic associations: from diabetes risk loci to disease mechanisms. *Cell*. 2014 Jan 16; 156(1-2):343-58. PMID: 24439387
35. Cisewski SE, Zhang L, Kuo J, Wright GJ, Wu Y, **Kern MJ**, Yao H. The effects of oxygen level and glucose concentration on the metabolism of porcine TMJ disc cells. *Osteoarthritis Cartilage*. 2015 Oct 23(10) 1790-6 PMID: 26033165
36. Wu Y, Kuo J, Wright GJ, Cisewski SE, Wei F, **Kern MJ**, Yao H. Viscoelastic shear properties of porcine temporomandibular joint disc. *Orthod Craniofac Res*. 2015 Apr;18 Suppl 1:156-63. doi: 10.1111/ocr.12088. PMID: 25865544
37. Wu Y., Cisewski SE, Sachs BL, Pellegrini VD, **Kern MJ**, and Yao H The Region-dependent Biomechanical and Biochemical Properties of Bovine Cartilaginous Endplate *Journal of Biomechanics* 2015 Sept 18:48(12) 3185-91 PMID: 26209084
38. Potter CS, **Kern MJ**, Baybo MA, Pruett ND, Sundberg JP, Awgulewitsch A. Dysregulated expression of sterol O-acyltransferase 1 (Soat1) in the hair shaft of Hoxc13 null mice. *Experimental and Molecular Pathology* 2015 Dec: 99 (3) 441-4 PMID: 4679597
39. Cisewski SE, Wu Y., Sachs BL, Pellegrini VD, **Kern MJ**, and Yao H Comparison of Oxygen Consumption Rates of Nondegenerate and Degenerate Human IVD Cells *Spine* 2018 Jan 15;43(2):E60-E67. PMID: PMC5701878.
40. Wright GJ, Coombs MC, Wu Y, Damon BJ, Bacro TH, **Kern MJ**, Chen X, Yao H. Electrical Conductivity Method to Determine Sexual Dimorphisms in Human Temporomandibular Disc Fixed Charge Density. *Ann Biomed Eng*. 2018 Feb;46(2):310-317. PMID: PMC5952609.
41. Chen H, Patel Y, Soni M, Liu S, Awgulewitsch A, **Kern MJ**, Shah N, Singh U. Overexpression of miR489 derails mammary hierarchy structure and inhibits Her2/neu-induced tumorigenesis. *Oncogene* (accepted) July 2018.
42. Shunkwiler LB, Pipaliya R, Guz J, Zhao Y, Glen WB, van Peel B, Sun B, Ashy CC, Homer-Bouthiette C, Hollman LR, Wang Q, Spruill LS, Wilson RC, Hardiman G, **Kern MJ**, Awgulewitsch A, Smits BMG. CRISPR-Cas9 generated allelic series of rat mutations confirms *Tox3* as a breast cancer susceptibility gene. *Genome Biology* (submitted PLOS Genetics July 2018)
43. Kern C. B., Norris R. A., Mitchell J. M., Peterson R. E., Baybo M., **Kern M.J.** Periostin is regulated by The Prx transcription factors during craniofacial development. (**in preparation for submission**)
44. Mitchell J. M., Baybo M., and **Kern M. J.** Antagonism of the Prx1 isoforms in mandibular chondrogenesis. (**in preparation for submission**)
45. Kern C. B., Norris R. A., Mitchell J. M., Peterson R. E., Mjaatvedt, C. M., Baybo M., **Kern M.J.** Prx transcription factors regulate versican expression during palate formation. (**in preparation for submission**)

COMMUNITY SERVICE:

Fundraising activities for the March of Dimes, 1998-2001

Presentation of research and science career opportunities to 9-10th graders in the gifted and talented science program from the Myrtle Beach High schools, Fall 1998 and 1999

T-ball and Baseball coach (boys age 5-8), Mt. Pleasant Recreation Department, Summers 1996-2002

First communion instructor (5th graders) St. Matthews Lutheran Church, Fall 1996 and 1997

Sunday School Asst. Superintendent St. Matthews Lutheran Church, Spring 1998-Fall 1999

Science Fair Judge Belle Hall Elementary School Spring 2003

MUSC Biomedical Science Career Fair with the MUSC Presidential Scholars at the Charleston Youth Development Center 2011-2014

Presentation to Wando High School AP academy on dentistry as a career and admissions requirements
May 2018