

## CURRICULUM VITAE

**NAME:** Paul R. Reynolds, Ph.D.

**ADDRESS:** **Brigham Young University**  
**Department of Physiology and Developmental Biology**  
3054 Life Sciences Building  
Provo, UT 84604  
Cell: (801) 414-4720  
Office: (801) 422-1933  
Fax: (801) 422-0004  
Email: [paul\\_reynolds@byu.edu](mailto:paul_reynolds@byu.edu)  
Website: [www.reynoldslab.byu.edu](http://www.reynoldslab.byu.edu)

**EDUCATION:** **B.S. Human Biology (1999)**  
Brigham Young University, Department of Zoology, Provo, UT 84602

**M.S. Zoology (2001)**  
Brigham Young University, Department of Zoology, Provo, UT 84602  
Thesis: "Protection of Retinoic Acid-Induced Cleft Palate in Mice by Separate and Concomitant Administration of Folic Acid and Methionine"  
Robert E. Seegmiller, Ph.D., Advisor.

**Ph.D. Molecular and Developmental Biology (2004)**  
Cincinnati Children's Hospital Medical Center, University of Cincinnati, Division of Developmental and Molecular Biology, Cincinnati, OH 45229  
Dissertation: "Midkine (MK) Regulates Pulmonary Vascular Remodeling During Hypoxia"  
Jeffrey A. Whitsett M.D., Advisor.

**Post-Doctoral Fellow (2004-2006)**  
Department of Internal Medicine, Pulmonary Division, University of Utah Health Sciences Center, Salt Lake City, UT 84239  
John R. Hoidal, M.D., Advisor.

### PROFESSIONAL EXPERIENCE:

**Associate Professor (2013-present)**  
Brigham Young University, Dept. of Physiology and Developmental Biology, Provo, UT 84602

**Visiting Professor (May 2013-Jan 2014)**  
University Hospitals and Clinics, University of Heidelberg, Department of Inner Medicine

**Assistant Professor (2007-2013)**  
Brigham Young University, Dept. of Physiology and Developmental Biology, Provo, UT 84602

**Assistant Research Professor (2006-2009)**  
University of Utah School of Medicine, Pulmonary Division, Salt Lake City, UT 84239

**Post-Doctoral Fellow (2004-2006)**  
University of Utah Health Sciences Center, Pulmonary Division, Salt Lake City, UT 84239

**Adjunct Instructor of Anatomy and Physiology (2004-2007)**

Division of Biological Sciences, Salt Lake Community College, Salt Lake City, UT 84123

**Doctoral Candidate (2003-2004)**

Developmental and Molecular Biology, Cincinnati Children's Hospital Medical Center, University of Cincinnati, Cincinnati, OH 45229

**Pre-doctoral Candidate (2001-2003)**

Developmental and Molecular Biology, Cincinnati Children's Hospital Medical Center, University of Cincinnati, Cincinnati, OH 45229

**PROFESSIONAL ACTIVITIES AND INTERESTS:****Teaching**Undergraduate and Graduate (MS)

1998-2001: Developed and instructed a course in teratology techniques and experimental design in embryonic toxicology. 2000-01: Served as a lecturer and laboratory director for embryology, anatomy, histology, molecular genetics, biology and zoology courses.

Post-doctoral

2004-07: Adjunct teaching instructor at Salt Lake Community College for General Biology, Foundations of Biology for science majors, and Anatomy and Physiology courses.

Faculty

Current teaching responsibilities include Histology and Human Embryology courses. Histology is a demanding professional school preparation class for majors covering elements of histology including pathology and development. Human embryology is a challenging capstone course that serves majors preparing for professional school. The course covers aspects of embryology, including classical, molecular signaling, and clinical ramifications. Significant additional instructional responsibilities in Cellular and Molecular Physiology, a graduate course, and an array of mentored undergraduate and graduate research courses.

**Research**Undergraduate

1999: Served as research director and managed students performing developmental toxicology studies. Research clarified the embryonic effects of carbon black oil (CBO), a refinery side-stream product that causes embryotoxicity varying from minor limb and tail defects to complete resorption.

Graduate (M.S.)

2000-01: Designed and carried out successful thesis research related to craniofacial morphogenesis and nutritive prevention of teratogen-induced birth defects. Results demonstrated that concomitant administration of folic acid and methionine were additive in the reduction of retinoic acid-induced embryopathies.

Graduate (Ph.D.)

2001-04: Dissertation research involved cell signaling in the developing lung. Research focused on hypoxic response and cascades associated with autocrine-paracrine signaling of the cytokine Midkine, a growth/differentiation factor involved in branching morphogenesis in the lung.

Significant findings included implication of Midkine as a factor that induces pulmonary vascular remodeling observed in the pathology of numerous pulmonary diseases.

#### Post-doctoral

2004-06: Post-doctoral research focused on the role of non-neuronal nicotinic acetylcholine receptors during lung development and mechanisms of pulmonary disease following receptor depolarization. Research aims also included clarifying the roles of transcription factors (TTF-1 and Egr-1) and developmentally expressed receptors in mechanisms of pulmonary inflammation and fibrosis relating to genetic predispositions and/or cigarette smoke exposure.

#### Faculty

Since 2006, research centers on the developmental role of autocrine/paracrine signaling in the lung during branching morphogenesis, pulmonary remodeling induced by interactions between mesenchymal/epithelial compartments, and mechanisms of pulmonary injury and inflammatory disease related to environmental tobacco or oxidative stress. Current focus is on materno-fetal interactions and antenatal programming of disease mechanisms.

#### **EXTERNAL GRANTS AND FELLOWSHIPS:**

<b>NHLBI LRP Clinical Research Grant (2016-2017), PI</b>	\$7,927.65
National Institutes of Health: Heart Lung and Blood Institute RAGE variability and the use of SAGEs in the treatment of smoke-induced inflammation	
<b>Clinical Innovator Grant (2016-2019), PI</b>	\$325,500.00
Flight Attendant Medical Research Institute RAGE and SAGE: Modeling secondhand smoke-induced COPD and therapeutic modalities	
<b>Clinical Innovator Grant (2014-2017), Co-PI</b>	\$325,500.00
Flight Attendant Medical Research Institute Role of OCTN1 in tobacco-induced COPD	
<b>Clinical Innovator Grant (2012-2016), PI</b>	\$325,500.00
Flight Attendant Medical Research Institute Systemic inflammation and Pulmonary RAGE expression	
<b>NHLBI LRP Clinical Research Grant (2010-2012)</b>	\$22,316.56
National Institutes of Health: Heart Lung and Blood Institute Endothelial based mechanisms of COPD pathogenesis involving RAGE	
<b>NHLBI LRP Clinical Research Grant (2008-2010)</b>	\$28,724.48
National Institutes of Health: Heart Lung and Blood Institute Novel mechanisms of COPD pathogenesis involving RAGE	
<b>Young Clinical Scientist Grant (2007-2012), PI</b>	\$542,500.00
Flight Attendant Medical Research Institute Award # 062473_YSCA Egr-1 Mediated Effects in Secondhand Tobacco Smoke Exposure	
<b>Parker B. Francis Fellowship in Lung Research (2006-2009)</b>	\$138,000.00
Parker B. Francis Pulmonary Research Foundation Transcription Factor Expression During Cigarette Smoke-Induced Lung Inflammation	

**Ruth L. Kirwischstein National Research Service Award (2004-2006)**

National Institutes of Health HL07636-15, Jeffrey Whitsett, PI

**PHS Graduate Training Grant (2001-2004)**

Developmental and Perinatal Endocrinology (HD07463)

**INSTITUTIONAL GRANTS AND FELLOWSHIPS:**

**BYU Mentoring Environment Grant (2017), PI** \$20,000.00  
Brigham Young University, Provo UT 84602

**BYU Mentoring Environment Grant (2015), Co-I (PI: Cook lab utilized \$20,000)** \$20,000.00  
Brigham Young University, Provo UT 84602

**BYU Mentoring Environment Grant (2013), PI** \$20,000.00  
Brigham Young University, Provo UT 84602

**BYU Mentoring Environment Grant (2011), PI** \$20,000.00  
Brigham Young University, Provo UT 84602

**BYU Graduate Mentoring Award (2011), PI** \$4,000.00  
Brigham Young University, Provo UT 84602

**BYU Gerontology Grant (2011), Co-PI (PI: Thomson lab utilized \$10,000)** \$10,000.00  
Brigham Young University, Provo UT 84602

**BYU Mentoring Environment Grant (2009), PI** \$20,000.00  
Brigham Young University, Provo UT 84602

**BYU Graduate Mentoring Award (2009), PI** \$4,000.00  
Brigham Young University, Provo UT 84602

**University Graduate Scholarship, UDGA-University Distinguished Graduate Assistantship (2001-2003)**

University of Cincinnati, CCHMC Developmental Biology Graduate Scholarship, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229

**University Graduate Studies Dean Award (2000)**

Research Assistantships and Teaching Assistantships  
Brigham Young University, Dept. of Zoology, Provo, UT 84602

**Undergraduate/Graduate Academic Scholarship (1996-2001)**

Brigham Young University, Dept. of Zoology, Provo, UT 84602

**PENDING GRANTS AND FELLOWSHIPS:**

**March of Dimes, PI.** \$150,000.00  
March of Dimes Research Grant, PI.  
The Pathophysiology of Secondhand Smoke-Induced Bronchopulmonary Dysplasia (BPD)

**National Institutes of Health R01, PI**

\$1,250,000.00

National Institutes of Health, National Heart, Lung, and Blood Institute  
RAGE and SAGE: Modeling smoke-induced COPD and therapeutic modalities

**STUDENT GRANTS, FELLOWSHIPS and AWARDS:**

**Brigham Young University Undergraduate ORCA Award, 2016**

Jason Gassman: Characterization of RAGE Expression in Peripheral Tissues in Response to Secondhand Smoke

**Brigham Young University Graduate Student Research Travel Award, 2015**

Josh Lewis, MS student

**Brigham Young University Graduate Student Exposition, 2015**

Rebecca Kimball, MS student mentee. Presentation Award, Grand Prize: \$1,000

**Brigham Young University Graduate Student Exposition, 2015**

Michael Nelson, MS student mentee. Presentation Award, College Honorable Mention

**The American Physiological Society Minority Travel Fellowship, Oct 2014**

Felix R. Jimenez, Conditional pulmonary overexpression of Claudin 6 (Cldn6) during embryogenesis delays lung morphogenesis.

**The American Physiological Society Minority Travel Fellowship, April 2014**

Felix R. Jimenez, Pulmonary expression and regulation of Cldn6 by tobacco smoke

**Brigham Young University Graduate Research Presentation Award, 2014**

Tyler Wood: Targeted mice reveal a role for RAGE in an early inflammatory response to tobacco smoke

**Brigham Young University Undergraduate ORCA Award, 2014**

Steven Knapp: Novel comet assay identifies preliminary DNA damage prior to cell apoptosis in mouse models of RAGE over-expression

**Brigham Young University Undergraduate ORCA Award, 2009**

Phillip Beck: Premature osteoarthritis and activation of the RAGE receptor

**Brigham Young University Undergraduate ORCA Award, 2011**

Tyler Earley: RAGE expression in inflammatory lung diseases

**Brigham Young University Undergraduate ORCA Award, 2011**

Megan Stogsdill: Novel mouse model of RAGE over-expression causes inflammation in adult mouse lungs

**Brigham Young University Undergraduate ORCA Award, 2011**

Jason Porter: The distribution of the alpha 5 nAChR subunits in the mouse lung

**Brigham Young University Undergraduate ORCA Award, 2010**

Jeff Stogsdill: The role of up-regulated advanced glycation end products (RAGE) in impaired lung development and respiratory disease

**Brigham Young University Undergraduate ORCA Award, 2010**

Karisa Wasley: The role of RAGE in inflammatory lung disease induced by diesel particulate matter

**David S. Bruce Award, Experimental Biology Meetings 2010**

Karisa Wasley

**Brigham Young University Undergraduate ORCA Award, 2010**

Alex Geyer: TTF-1 regulates the expression of genes that are critical for lung formation and function

**Brigham Young University Undergraduate ORCA Award, 2009**

Cami Alison: RAGE Expression in Inflammatory Lung Diseases Triggered by Air Pollutants

**AWARDS:**

**APS-TPS Joint Meeting Award (2016)**

International Physiology Committee and the Council of the American Physiological Society

**Department Distinguished Faculty Award (2015)**

Physiology and Developmental Biology Department, Brigham Young University

**American Physiological Society Research Career Enhancement Award (2015)**

American Physiological Society

**CyPlex Systems American Society of Reproductive Immunology Grant (2014)**

CyPlex Systems and The American Society for Reproductive Immunology

**American Physiology Minority Fellowship Award Mentor (2014)**

American Physiological Society

**International Union of Physiological Sciences Congress: Birmingham, England (2013)**

International Travel Presentation Award

**Respiratory Section New Investigator Award, (2012)**

American Physiological Society

**Presentation Award (2012)**

Society of Developmental Biology Conference, Montreal, Canada

**American Physiological Society Research Career Enhancement Award (2011)**

American Physiological Society

**Presentation Award (2011)**

Society of Developmental Biology Conference, Chicago, IL

**National Institutes of Health LRP award (2010-2012)**

National Institutes of Health, NHLBI Extramural Clinical Researcher

**National Institutes of Health LRP award (2008-2010)**

National Institutes of Health, NHLBI Extramural Clinical Researcher

**University of Utah Faculty Scholarly and Creative Research Award (2008)**

University of Utah School of Medicine

**Presentation/Travel Award (2007)**

Society of Developmental Biology Conference, Cancun Mexico

**Presentation/Travel Award (2006)**

Society of Developmental Biology Conference, Ann Arbor, MI

**Presentation/Travel Award (2005)**

Society of Developmental Biology Conference, San Diego CA

**Trainee Travel Award, National Heart, Lung and Blood Institute (2004)**

National Institutes of Health

13<sup>th</sup> Annual International Vascular Biology Meeting, Toronto, Canada

**Young Investigator Platform Presentation Award (2004)**

13<sup>th</sup> Annual International Vascular Biology Meeting, Toronto, Canada

**Young Investigator Travel Award (2001)**

41<sup>st</sup> Annual Teratology Society Meetings

**Student Presentation Award, Plenary Platform Session (2001)**

41<sup>st</sup> Annual Teratology Society Meetings

**PATENTS AND INVENTIONS**

Provisional Patent filed 23 July 2013 and refilled Oct 2014 (Provisional patent number 61/741,814); RAGE transgenic mice are novel models for COPD pathogenesis

Provisional Patent filed 23 July 2013 (Provisional patent number 61/741,723)  
Therapeutic alleviation of chronic rhinosinusitis by modeling with RAGE transgenic mice

**PROFESSIONAL ORGANIZATION MEMBERSHIPS:**

American Society for Integrative Pathology, ASIP (2015-present)

American Association for Dental Research, AADR (2015-present)

The American Physiological Society, APS (2007-present)

Society for Developmental Biology, SDB (2005-present)

The American Thoracic Society, ATS (2002-present)

The Teratology Society (2000-2001)

**PROFESSIONAL SERVICE RENDERED**

**Editorial Board Memberships**

Respiratory Research (**IF=3.642**), Jan Lötvall, Editor-in-Chief; Editorial Board Member (2014-present)

American Journal of Respiratory Cell and Molecular Biology (IF=4.080), Kenneth Alder, Editor-in-Chief; Editorial Board Member (2014-present)  
International Journal of Molecular Sciences (IF=3.257), Rui Liu, Managing Editor; Invited Guest Editor for Special Issue, "Inhaled Pollutants Modulate Respiratory and Systemic Diseases" (2016-17)

### **Professional Organization Leadership**

American Association for Dental Research, Utah Section, Secretary (2016-present)  
President Olga Baker, DDS

### **Editorial Manuscript Referee**

Life Sciences; I. Glenn Sipes, Ph.D., Editor (IF=2.702)  
American Journal of Respiratory Cell and Molecular Biology; Michael J. Holtzman, M.D., Editor (IF=3.985)  
Expert Review of Anticancer Therapy; Elisa Manzotti, Editorial Director (IF=2.249)  
American Journal of Physiology: Lung Cell and Molecular Biology; Sadis Matalon, Editor (IF=4.080)  
Pulmonary Pharmacology and Therapeutics; Esteban J Morcillo, Editor (IF=2.937)  
Journal of Biomedicine and Biotechnology; Karl Chai, Editor (IF=1.579)  
European Respiratory Journal; Vito Brusasco, Editor (IF=6.355)  
Monoclonal Antibodies; Janice Reichert, Editor (IF=4.814)  
Frontier in Bioscience; Lin Li, Editor (IF=3.523)  
Journal of Dental Research; Dana Graves, Associate Editor (IF=4.144)  
Toxicology; Kendall B. Wallace, Managing Editor (IF=3.621)  
Histology and Histopathology; Francisco Hernandez, Editor (IF=2.096)  
PloS One, Tim D. Oury, Academic Editor (IF=3.234)  
Biotechnology and Applied Biochemistry; Nicholas Brindle Associate Editor (IF=1.239)  
Cell Biology and Toxicology; John Masters, Editor in Chief (IF=2.677)  
Differentiation; Gerald Cunha, Senior Editor (IF=2.836)  
Respiratory Research; Jan Lötvall, and Reynold A Panettieri, Editors (IF=3.642)  
Environmental Health Perspectives; Steven Kleeberger, Editor (IF=7.977)  
Anatomical Sciences Education; Wojciech Pawlina, Editor (IF=2.976)  
Thorax; Alan Smyth, Editor (IF=8.376)  
Experimental Endocrinology and Diabetes; Peter Nawroth, Editor (IF=1.555)  
Biomed Research International; Salvatore Battaglia, Associate Editor (IF=1.579)  
Scientific Reports, Nature Publishing Group; Oliver Eickelberg, Editor (IF=5.578)  
International Journal of Environmental Research and Public Health; Paul B. Tchounwou, Editor (IF=2.063)  
Inhalation Toxicology; Mitchell D. Cohen, Editor in Chief (IF=2.26)

### **Grant Review Study Sections**

Research Councils UK (RCUK): Medical Research Council (MRC), Invited Referee 2016  
Cellular and Molecular Control of Human Embryonic Alveolar Development: Towards Lung Regeneration

Austrian Science Fund (FWF), Invited Referee 2016  
Biological and Medical Sciences Module

Kentucky Science and Engineering Foundation (KSEF), Invited Referee 2016



### *KSEF-15-RDE-019 Award Mechanism*

FAMRI Competitive Grant Review Committee, Invited Referee 2015  
Panel: *Second Hand Tobacco Smoke Exposure, Emphysema, and COPD*

Deutsche Forschungsgemeinschaft (DFG: German Research Foundation), Invited Referee 2015  
Panel: *Alveolarization and Lung Injury*

FAMRI Competitive Grant Review Committee, Invited Referee 2014  
Panel: *Second Hand Tobacco Smoke Exposure, Emphysema, and COPD*

Danish Council for Independent Research (DFF), 2013  
Sapere Aude: DFF Advanced Grant in Medical Sciences

Netherlands Organization for Scientific Research (NWO), 2012  
Panel: Vici Grants Mechanism: Innovational Research Incentives Scheme

FAMRI Competitive Grant Review Committee, Invited Referee 2012  
Panel: *Second Hand Tobacco Smoke Exposure, Emphysema, and COPD*

FAMRI Competitive Grant Review Committee, Invited Referee 2010  
Panel: *Respiratory Effects of Second Hand Tobacco Smoke Exposure*

FAMRI Competitive Grant Review Committee, Invited Referee 2009  
Panel: *Respiratory Effects of Second Hand Tobacco Smoke Exposure*

Southwest Environmental Health Sciences Center (NIEHS)  
Pilot Grant Program. Reviewer, 2009

### **UNIVERSITY SERVICE RENDERED**

BYU Faculty Center Pre-Continuing Faculty Status (Tenure) Liaison (2017)  
BYU College of Life Sciences 3 Minute Thesis Competition judge (2016)  
BYU Faculty Center International Leave Liaison (2015)  
PDBio Graduate Committee Chair (2014-present)  
PDBio New Faculty Strategic Planning Committee (2011-2013)  
University Pre-professional Advisement Center Mentor (2008-present)  
PDBio Department Graduate Committee Member (2009-2014)  
College of Life Sciences Building Planning Committee Member (2010-2012)  
PDBio Department Faculty Search Committee Member (2010)  
PDBio Department Faculty Search Committee Member (2008)

### **TEACHING ACTIVITIES**

Brigham Young University is predominantly an undergraduate teaching institution. As such, modest graduate programs and research productivity must be balanced so that its central teaching mission is maintained.

**Current Courses**      PDBio 325: Tissue Biology is a challenging class many pre-professional students enroll in that covers characteristics of histology including pathology and development.

Semester	Lectures/week	Total lectures	No. Students	Overall Course*	Overall Instructor*
W 2008	2-3	28	77	6.6	6.8
F 2008	2-3	28	76	6.8	7.0
W 2009	2-3	28	92	6.7	6.9
F 2009	2-3	28	80	6.8	7.0
W 2010	2-3	28	71	6.9	7.1
F 2010	2-3	28	68	6.8	6.9
W 2011	2-3	28	78	7.2	7.4
F 2011	2-3	28	67	7.1	7.2
W 2012	2-3	28	66	7.3	7.3
F 2012	2-3	28	74	7.2	7.2
W 2013	2-3	28	60	7.1	7.2
F 2013	Sabbatical				
W 2014	2-3	28	70	7.0	7.3
F 2014	2-3	28	55	7.2	7.4

W = Winter semester, F = Fall semester, \*scale = 1-8

Semester	Lectures/week	Total lectures	No. Students	Composite Student Rating**
W 2015	2-3	28	68	4.7 (Department Average = 4.3)
F 2015	2.3	28	51	4.7 (Department Average = 4.3)
W 2016	2-3	28	50	4.8 (Department Average = 4.4)
F 2016	2-3	28	64	4.9 (Department Average = 4.5)

W = Winter semester, F = Fall semester, \*\*scale = 1-5

**PDBio 484:** Human Embryology is an advanced capstone course that covers anatomical, molecular, and clinical aspects of embryology serves majors preparing for professional school.

Semester	Lectures/week	Total lectures	No. Students	Overall Course*	Overall Instructor*
F 2011	3	44	24	7.1	7.3
F 2012	3	44	26	7.3	7.5
F 2013	Sabbatical				
F 2014	3	44	27	7.2	7.5

F = Fall semester, \*scale = 1-8

Semester	Lectures/week	Total lectures	No. Students	Composite Student Rating**
F 2015	3	44	21	4.7 (Department Average = 4.3)
F 2016	3	44	32	4.8 (Department Average = 4.5)

F = Fall semester, \*scale = 1-5

**PDBio 694:** Graduate Research Presentation is a graduate course in which all matriculated graduate students participate in a research in progress seminar series.

Semester	Hours per week	Enrolled Students	Overall Course*	Overall Instructor*
F 2010	2	21	7.0	7.0
F 2011	2	27	7.7	7.7
F 2012	2	30	6.3	6.3
F 2013	Sabbatical			

F = Fall semester, \*scale = 1-8

**PDBio 601:** Cellular and Molecular Physiology is a team-taught graduate course that focuses on organ system physiology at the cellular and molecular levels.

Semester	Credit hours	Total Lectures	Students enrolled
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F 2008	3	4	11
F 2009	3	4	8
F 2010	3	4	11
F 2011	3	4	9
F 2012	3	4	9
F 2013	Sabbatical		
F 2014	3	4	5
F 2015	3	4	7
F 2016	3	4	5

F = Fall semester

### PDBio 494 and 495: Undergraduate and Advanced Undergraduate Research

	2008			2009			2010			2011		
	W	S.S	F	W	S.S	F	W	S.S	F	W	S.S	F
Students enrolled	1	0	2	3	3	10	12	6	13	11	11	14

W = Winter semester, S.S = Spring and Summer terms, F = Fall semester

	2012			2013			2014			2015		
	W	S.S	F	W	S.S	F	W	S.S	F	W	S.S	F
Students enrolled	21	12	16	23	9	14	22	8	18	17	15	17

W = Winter semester, S.S = Spring and Summer terms, F = Fall semester

	2016			2017			2018			2019		
	W	S.S	F	W	S.S	F	W	S.S	F	W	S.S	F
Students enrolled	13	12	15									

W = Winter semester, S.S = Spring and Summer terms, F = Fall semester

### **Undergraduate Student Mentoring (number per year)**

Students work in my laboratory on a research project over the course of 1-3 years and receive direct mentoring throughout their tenure. Students go on to either graduate or professional (medical, dental, pharmacy, veterinary, or physician's assistant) school. In addition to conducting research, students are required to participate in weekly lab meetings and the journal club designed for our research program.

2007	4	2008	4	2009	21	2010	26	2011	28	2012	24
2013	27	2014	26	2015	28	2016	29				

### **Undergraduate Honor's Thesis**

1. Stephen D. Kasteler. "The regulation and effects of receptors for advanced glycation end-products (RAGE) in pulmonary epithelial cells exposed to cigarette smoke" Role: Mentor, Committee chair

### **Graduate Student Mentoring**

#### **Master's of Science**

1. Aimee Hodson, MS Student, BYU. 2015-2016. Role: Graduate Committee Member
2. Rebecca Kimball, MS Student, BYU. 2014-2016. Role: Graduate Committee Member
3. Kristen Mecham, MS Student, BYU. 2014-2015. Role: Graduate Committee Member
4. Ivan Arano, MS Student, BYU. 2014-2015. Role: Graduate Committee Member
5. Michael Nelson, MS Student, BYU. 2013-2015. Role: Graduate Committee Chair
6. Elizabeth Chavez, MS Student, BYU. 2012-2014. Role: Graduate Committee Member
7. Tyler Wood, MS Student, BYU. 2013-2014. Role: Graduate Committee Chair

8. Jeffrey A. Stogsdill, MS Student, BYU. 2011-2012. Role: Graduate Committee Chair
9. Adam Robinson, MS Student, BYU. 2011-2012. Role: Graduate Committee Chair

### **Doctor of Philosophy**

1. Kelsey Hirschi, PhD Student, BYU. 2016-present. Role: Graduate Committee Chair
2. Brandon Rose, PhD Student, BYU. 2016-present. Role: Graduate Committee Member
3. Kelsey Phillips, PhD Student, BYU. 2015-present. Role: Graduate Committee Member
4. Caleb Cornaby, PhD Student, BYU. 2014-present. Role: Graduate Committee Member
5. Nafiseh Poornejad, PhD Student, BYU. 2014-present. Role: Graduate Committee Member
6. Joshua Lewis, PhD Student, BYU. 2014-present. Role: Graduate Committee Chair
7. Felix Jimenez, PhD Student, BYU. 2012-2015. Role: Graduate Committee Chair
8. Kevin Tuttle, PhD Student, BYU. 2012-present. Role: Graduate Committee Member
9. Mikayla Thatcher, PhD Student, BYU. 2012-2015. Role: Graduate Committee Member
10. Duane Winden, PhD Student, BYU. 2013-2014. Role: Graduate Committee Chair
11. Jason S. Adams, PhD Student, BYU. 2009-2012. Role: Graduate Committee Member

### **MEETING ATTENDANCE AND PRESENTATIONS**

1. American Association for Dental Research, Los Angeles, CA (2016)
2. Experimental Biology International Meeting, San Diego, CA (2016)
3. American Thoracic Society International Conference: San Francisco, CA (2016)
4. FAMRI Scientific Research Symposium, Miami, FL (2016)
5. National Institutes of Health Regional Seminar, Baltimore, MD (2016)
6. Experimental Biology International Meeting, Boston, MA (2015)
7. FAMRI Scientific Research Symposium, Miami, FL (2015)
8. Society for the Study of Reproduction, San Juan, Puerto Rico (2015)
9. Society for Developmental Biology Annual Meetings, Snowbird, Utah (2015)
10. Experimental Biology International Meeting, San Diego, CA (2014)
11. FAMRI Scientific Research Symposium, Miami, FL (2014)
12. American Diabetes Association Meetings, San Francisco, CA (2014)
13. Am Society for Reproductive Immunology 34<sup>th</sup> Annual Meeting, New York, NY (2014)
14. International Union of Physiological Sciences Congress: Birmingham, England (2013)
15. Experimental Biology International Meeting, Boston, MA (2013)
16. Society for Developmental Biology Annual Meetings, Montreal, Canada (2012)
17. FAMRI Scientific Research Symposium, Miami, FL (2012)
18. Experimental Biology International Meeting, San Diego, CA (2012)
19. Gordon Research Conference: Lung Development, Injury and Repair, Newport, RI (2011)
20. Experimental Biology International Meeting, Washington DC (2011)
21. Society for Developmental Biology Annual Meetings, Chicago, IL (2011)
22. Experimental Biology International Meeting, Anaheim, CA (2010)
23. American Thoracic Society International Conference, New Orleans, LA (2010)
24. FAMRI Scientific Research Symposium, Miami, FL (2010)
25. International Society for Developmental Biologists, Edinburgh, Scotland (2009)
26. American Thoracic Society International Conference, San Diego, CA (2009)
27. FAMRI Scientific Research Symposium, Boston, MA (2009)
28. American Thoracic Society International Conference, Toronto, Canada (2008)
29. Experimental Biology International Meeting, San Diego, CA (2008)
30. FAMRI Scientific Research Symposium, Boston, MA (2008)
31. American Thoracic Society International Conference, San Francisco, CA (2007)
32. First Pan American Conference in Developmental Biology, Cancun, Mexico (2007)

33. FAMRI Scientific Research Symposium, Miami, FL (2007)
34. Society for Developmental Biology Annual Meetings, Ann Arbor, MI (2006)
35. 100<sup>th</sup> American Thoracic Society International Conference: San Diego, CA (2005)
36. Society for Developmental Biology Annual Meetings, San Francisco, CA (2005)
37. Annual International Vascular Biology Meeting, Toronto, Canada (2004)
38. American Thoracic Society International Conference, Seattle, WA (2003)
39. Annual Graduate Research Symposium, University of Cincinnati; Cincinnati, OH (2002)
40. Teratology International Meetings, Montreal, Canada (2001)

## INVITED ORAL PRESENTATIONS AND LECTURES

1. **Experimental Biology International Meeting, San Diego, CA (2016)** “Organic Cation Transporter Novel Type-1 (OCTN-1) and Pulmonary Responses to Secondhand Tobacco Smoke (SHS)”. Oral Presentation.
2. **Experimental Biology International Meeting, San Diego, CA (2016)** “Altered Inflammatory Responses in Tobacco Smoke-Exposed Mice That Over-Express the Tight Junctional Protein Claudin-6”. Oral Presentation.
3. **Experimental Biology International Meeting, San Diego, CA (2016)** “Transgenic Up-Regulation of Claudin-6 Decreases Diesel Particulate Matter (DPM)-Induced Pulmonary Inflammation”. Oral Presentation.
4. **Research Institute at Nationwide Children’s Hospital, The Ohio State University. Child Health Research Center (CHRC) Seminar Series, Columbus, Ohio (2016)** “RAGE and the foreshadowing of lung disease”. Oral Seminar Presentation.
5. **Experimental Biology International Meeting, Boston, MA (2015)** Platform Symposium: Neonatal Lung Development and Adult Lung Homeostasis: Common Molecular Mechanisms in Lung Disease. “RAGE mediation of developmental and adult pulmonary disorders”
6. **University Hospitals and Clinics, University of Heidelberg, Department of Inner Medicine (2013)**. “RAGE: Pulmonary functions and disease modeling”. Oral Presentation.
7. **Experimental Biology International Meeting, Boston, MA (2013)** “Developmental expression and transcriptional regulation of claudin-6 in the murine lung”. Oral Presentation.
8. **Experimental Biology International Meeting, Boston, MA (2013)** “Over-expression of RAGE by proximal lung epithelial cells causes an inflammatory response in adult mice”. Oral Presentation.
9. **Experimental Biology International Meeting, Boston, MA (2013)** “RAGE signaling influences diesel particulate matter-induced inflammation in primary alveolar macrophages”. Oral Presentation.
10. **Brigham Young University Physiology and Developmental Biology Seminar Series, Provo, UT (2012)** “The RAGE of ALL: Conserved Pathways of Inflammatory Disease”. Oral Presentation.
11. **Experimental Biology International Meeting, San Diego, CA (2012)** “RAGE signaling influences tobacco smoke-induced inflammation by pulmonary macrophages”. Oral presentation.
12. **Experimental Biology International Meeting, San Diego, CA (2012)** “Diesel particulate matter (DPM) induces receptor for advanced glycation end-products (RAGE) expression by pulmonary macrophages”. Oral Presentation.
13. **Roseman University of Health Sciences (2011-2016)** “Histology and Embryology for the first year Dental Student”. Oral Presentation Series.

14. **Roseman University of Health Sciences (2011-2016)** “Pulmonary Biology for the first year Dental Student”. Oral Presentation Series.
15. **School of Pharmacy and Pharmaceutical Sciences, Trinity College, Dublin Ireland (2011)** “Why all the RAGE: insight into lung development and disease”. Oral Presentation.
16. **Experimental Biology International Meeting, Washington DC (2011)** “A new RAGE blocker, low anti-coagulant 2-O, 3-O desulfated heparin (ODSH), diminishes smoke-induced pulmonary inflammation in mice”. Oral Presentation.
17. **Experimental Biology International Meeting, Washington DC (2011)** “Persistent over-expression of RAGE in adult mouse lung causes airspace enlargement and pulmonary inflammation coincident with emphysema”. Oral Presentation.
18. **College of Chemistry and Biochemistry Seminar Series, BYU, Provo, UT (2011)** “Why all the RAGE: insight into the role of RAGE in lung development and disease”. Oral Presentation.
19. **Southern Utah University Spring Biology Seminar Series, Cedar City, UT (2010)** “Correlations between RAGE and Lung Disease”. Oral Presentation
20. **Brigham Young University Physiology and Developmental Biology Seminar Series, Provo, UT (2010)** “RAGE and Insights into Pulmonary Disease”. Oral Presentation.
21. **FAMRI Scientific Research Symposium, Miami, FL (2009)** “The RAGE of Smoke Induced Pulmonary Disease”. Platform Oral Presentation.
22. **Annual International Vascular Biology Meeting, Toronto, Canada (2004)** “Midkine regulates pulmonary vascular remodeling during hypoxia”. Oral Presentation.
23. **The Teratology Society 41<sup>st</sup> Annual Meeting, Montreal, Canada (2001)** “Protection of Retinoic Acid-Induced Cleft Palate in Mice by Separate and Concomitant Administration of Folic Acid and Methionine”. Oral Presentation.

#### INVITED SESSION CHAIRMANSHIPS AT NATIONAL MEETINGS

1. **Experimental Biology International Meeting, Washington DC (2011)** Session: American Society for Investigative Pathology: Pulmonary Pathobiology. Title: ASPI-Inflammation.

#### RESEARCH PUBLICATIONS

##### Peer-Reviewed Publications

Undergraduate co-authors are underlined

1. Monson T, Wright T, Galan HL, **Reynolds PR**, and Arroyo JA. 2017. Caspase dependent and independent mechanisms of apoptosis across gestation in a sheep model of placenta insufficiency and intrauterine growth restriction. *Apoptosis* doi:10.1007/s10495-017-1343-9.
2. Jimenez JR, Lewis JB, Belgique ST, Milner DC, Lewis AL, Dunaway TM, Egbert KM, Winden DR, Arroyo JA, and **Reynolds PR**. 2016. Cigarette smoke and decreased oxygen tension inhibit pulmonary Claudin-6 expression. *Exp Lung Res*, Dec 16:1-13.
3. Lewis JB, Milner DC, Lewis AL, Dunaway TM, Egbert KM, Albright SC, Merrell BJ, Monson TD, Broberg DS, Gassman JR, Thomas DB, Arroyo JA and **Reynolds PR**. 2016. Up-regulation of Claudin-6 in the distal lung impacts secondhand smoke-induced inflammation. *Int J Environ Res Public Health*, 13(10). pii: E1018.
4. Mejia C, Lewis J, Jordan C, Mejia J, Ogden C, Monson T, Winden D, **Reynolds PR**, and Arroyo JA. 2016. Decreased activation of placental mTOR family members is associated with the induction of intrauterine growth restriction (IUGR) by secondhand smoke (SHS) in the mouse. *Cell Tissue Res*, 9 Sept 2016, DOI: 10.1007/s00441-016-2496-5.
5. Poornejad N, Schaumann LB, Buckmiller EM, Momtahan N, Gassman JR, Ma HH, Roeder BL, **Reynolds PR** and Cook AD. 2016. The impact of decellularization agents on renal tissue extracellular matrix. *J Biomater Appl* 31(4):521-533.

6. Chavez EM, Mecham DK, Black JW, Graf JW, Wilhelm SK, Anderson KM, Mitchell JA, Macdonald JR, Hollis WR, Eggett DL, **Reynolds PR**, and Kooyman DL. 2016. Malocclusion Model of Temporomandibular Joint Osteoarthritis in Mice with and Without Receptor For Advanced Glycation End Products. *Archives of Oral Biology*, 69:47-62.
7. Long E, Motwani R, Reece D, Pettit N, Hepworth J, Wong P, **Reynolds PR**, and Seegmiller RE. 2016. The role of TGF- $\beta$ 1 in osteoarthritis of the temporomandibular joint in two genetic mouse models. *Arch Oral Biol* 67:68-73.
8. Poornejad N, Momtahan N, Salehi ASM, Scott D, Fronk C, Roeder BL, **Reynolds PR**, Bundy B, and Cook AD. 2016. Efficient decellularization of whole porcine kidneys improves reseeded behavior. *Biomed Materials* 11(2):025003.
9. Baeder AC, Napa K, Richardson ST, Taylor OJ, Anderson SG, Wilcox SH, Winden DR, **Reynolds PR**, and Bikman BT. 2016. Oral Gingival Cell Cigarette Smoke Exposure Induces Muscle Cell Metabolic Disruption. *Int J Dentistry* 2016: 2763160.
10. Alexander KL, Mejia CA, Jordan C, Nelson MB, Howell BM, Jones CM, **Reynolds PR**, and Arroyo JA. 2016. Differential Receptor for Advanced Glycation End-Products (RAGE) Expression in Preeclamptic, Intrauterine Growth Restricted, and Gestational Diabetic Placentas. *Am J Reprod Immunol*. 75(2):172-180.
11. Kimball R, Wayment M, Merrill D, Wahlquist T, **Reynolds PR**, and Arroyo JA. 2015. Hypoxia reduces placental mTOR activation in a hypoxia-induced model of intrauterine growth restriction (IUGR). *Physiol Rep* 3(12):e12651.
12. Poornejad N, Nielson J, Morris R, Gassman J, **Reynolds PR**, Roeder BL, and Cook AD. 2015. Comparison of four decontamination treatments on porcine renal dECM structure, composition, and support of human RCTE cells. *J Biomater Appl* 0885328215615760, doi:10.1177/0885328215615760
13. Siebert M, Wilhelm SK, Kartchner JZ, Mecham D, **Reynolds PR**, and Kooyman DL. 2015. Effect of pharmacological blocking of TLR4 on osteoarthritis in mice. *J Arthritis*: 164. Doi:10.4172/2167-7921.1000164, in press.
14. Olsen DS, Goar WA, Nichols BA, Bailey KT, Christensen SL, Merriam KR, **Reynolds PR**, Wilson E, Weber KS, and Bridgewater LC. 2015. Targeted mutation of nuclear bone morphogenetic protein 2 (nBMP2) impairs secondary immune response in a mouse model. *BioMed Res Int*, 2015:975789. doi:10.1155/2015/975789.
15. Momtahan N, Poornejad N, Struk JA, Castleton AA, Herrod BJ, Vance BR, Eatough JP, Roeder BL, **Reynolds PR**, and Cook AD. 2015. Automation of pressure control improves whole porcine heart decellularization. *Tissue Engineering C*, DOI: 10.1089/ten.tec.2014.0709.
16. Jimenez FR, Belgique ST, Lewis JB, Albright SA, Jones CM, Howell BM, Mika AP, Jergensen TR, Gassman JR, Morris RJ, Arroyo JA, and **Reynolds PR**. 2015. Conditional pulmonary over-expression of Claudin-6 (Cldn6) during embryogenesis delays lung morphogenesis. *Int J Dev Biol*, doi: 10.1387/ijdb.150086pr.
17. Nelson MB, Swensen AC, Winden DR, Bodine JS, Bikman BT, and **Reynolds PR**. 2015. Cardiomyocyte mitochondrial respiration is reduced by receptor for advanced glycation end-products (RAGE) signaling in a ceramide-dependent manner. *AJP: Heart and Circulation Physiology* 309:H63-H69.
18. Poornejad N, Frost TS, Scott DR, Elton BB, **Reynolds PR**, Roeder BL, and Cook AD. 2015. Freezing/thawing without cryoprotectant damages native but not decellularized porcine renal tissue. *Organogenesis* 11(1):30-45.
19. Tippetts TS, Winden DR, Swensen AC, Nelson MB, Thatcher MO, Saito RR, Condie TB, Simmons KJ, Judd AM, **Reynolds PR**, and Bikman BT. 2014. Cigarette smoke increases cardiomyocyte ceramide accumulation and inhibits mitochondrial respiration. *BMC Cardiovasc Disord*, 14(1):165.

20. Bodine BG, Bennion BG, Leatham E, Jimenez FR, Wright AJ, Jergensen ZR, Erickson CJ, Jones CM, Johnson JP, Knapp SM, and **Reynolds PR** 2014. Conditionally induced RAGE expression by proximal airway epithelial cells in transgenic mice causes lung inflammation. *Respir Res*, 15(1):133.
21. Winden DR, Barton DB, Betteridge BC, Bodine JS, Jones CM, Rogers GD, Chavarria M, Wright AJ, Jergensen ZR, Jimenez FR, and **Reynolds PR** 2014. Antenatal exposure of maternal secondhand smoke (SHS) increases fetal lung expression of RAGE and induces RAGE-mediated pulmonary inflammation. *Respir Res*, 15(1):129.
22. Thatcher MO, Tippetts TS, Nelson MB, Swensen AC, Winden DR, Hansen ME, Anderson MC, Johnson IE, Porter JP, **Reynolds PR**, and Bikman BT 2014. Ceramides mediate cigarette smoke-induced metabolic disruption in mice. *AJP: Endocrine Metabolism*, 307(10):E919-27.
23. Wood TT, Winden DR, Marlor DR, Wright AJ, Jones CM, Chavarria M, Rogers GD, and **Reynolds PR** 2014. Acute secondhand smoke-induced pulmonary inflammation is diminished in RAGE knock out mice. *AJP: Lung Cell Mol Physiol*. 307(10):E919-27.
24. Jimenez FR, Lewis JB, Belgique ST, Wood TT, and **Reynolds PR** 2014. Developmental lung expression and transcriptional regulation of Claudin-6 by TTF-1, Gata-6, and FoxA2. *Respir Res*, 15(1):70.
25. Barton DB, Betteridge BC, Earley TD, Curtis CS, Robinson AB, and **Reynolds PR** 2014. Primary alveolar macrophages exposed to diesel particulate matter increase RAGE expression and activate RAGE signaling. *Cell Tissue Res* 358(1):229-238.
26. Winden DR, Ferguson NT, Bukey BR, Geyer AJ, Wright AJ, Jergensen ZR, Robinson AB, Stogsdill JR, and **Reynolds PR** 2013. Conditional over-expression of RAGE by embryonic alveolar epithelium compromises the respiratory membrane and impairs endothelial cell differentiation. *Respir Res* 14(1):108.
27. Larkin DJ, Kartchner JZ, Doxey AS, Hollis WR, Rees JL, Wilhelm SK, Draper CS, Peterson DM, Jackson GG, Ingersoll C, Haynie SS, Chavez E, **Reynolds PR**, Kooyman DL 2013. Inflammatory markers associated with osteoarthritis after destabilization surgery in young mice with and without Receptor for Advanced Glycation End-Products (RAGE). *Frontiers in Integ Physiol* 4: 121. doi: 10.3389/fphys.2013.00121.
28. Stogsdill MP, Stogsdill JA, Bodine BG, Fredrickson AC, Sefcik TL, Wood TT, Kasteler SK, and **Reynolds PR** 2013. Conditional RAGE over expression in the adult murine lung causes airspace enlargement and induces inflammation. *Am J Resp Cell Mol Biol* 49(1):128-134.
29. Ricks ML, Farrell JT, Falk DJ, Holt DW, Rees M, Carr J, Williams T, Nichols BA, Bridgewater LC, **Reynolds PR**, Kooyman DL, and Seegmiller RE 2013. Osteoarthritis in temporomandibular joint of *Col2a1* mutant mice. *Advances in Oral Biology* 58(9):1092-9.
30. Robinson AB, Stogsdill JA, Lewis JP, Wood TT, and **Reynolds PR** 2012. RAGE and tobacco smoke: Insights into modeling Chronic Obstructive Pulmonary Disease. *Frontiers in Resp Physiol* 3:301. doi: 10.3389/fphys.2012.00301.
31. Robinson AB, Dickson, KD, Bennion BG, and **Reynolds PR** 2012. RAGE signaling by alveolar macrophages influences tobacco smoke-induced inflammation. *AJP: Lung Cell Mol Physiol* 302(11):L1192-9.
32. Stogsdill JA, Stogsdill MP, Porter JL, Hancock JM, Robinson AB, and **Reynolds PR** 2012. Embryonic over-expression of RAGE by alveolar epithelium induces an imbalance between proliferation and apoptosis. *Am J Resp Cell Mol Biol*. 47(1):60-6.
33. **Reynolds PR**, Stogsdill JA, Stogsdill MP, and Heimann NB 2011. Up-Regulation of RAGE by Alveolar Epithelium Influences Cytodifferentiation and Causes Severe Lung Hypoplasia. *Am J Resp Cell Mol Biol* 45(6): 1195-202.



34. Bukey BR, Geyer AJ, and Porter JL and **Reynolds PR** 2011. Immunohistochemical detection and regulation of alpha 5 nicotinic acetylcholine receptor (nAChR) subunits by FoxA2 during mouse lung organogenesis. *Respir Res* 12(1):82.
35. **Reynolds PR**, Allison CH, and Willnauer CP 2010. TTF-1 Regulates Alpha 5 Nicotinic Acetylcholine Receptor (nAChR) Subunits in Proximal and Distal Lung Epithelium. *Respir Res* 11:175.
36. **Reynolds PR**, Wasley KM, and Allison CH 2010. Diesel Particulate Matter Induces RAGE Expression in Pulmonary Epithelium and RAGE Signaling Influences NF- $\kappa$ B-Mediated Inflammation. *Environ Health Per* 119(3):332-9.
37. **Reynolds PR**, Kasteler SD, Schmitt RE and Hoidal JR 2010. RAGE Signals Through Ras During Tobacco Smoke-Induced Pulmonary Inflammation. *Am J Resp Cell Mol Biol* 45(2):411-8.
38. Rao NV, Argyle B, Xu Z, **Reynolds PR**, Walenga JM, Prechel M, Prestwich GD, Hoidal JR, and Kennedy TP 2010. Low Anticoagulant Heparin Targets Multiple Sites in Inflammation, Suppresses Heparin-Induced Thrombocytopenia and Inhibits Interaction of RAGE with its Disparate Ligands. *Am J Physiol Cell Physiol* 299(1):C97-110.
39. **Reynolds PR**, Kasteler S.D, Sturrock A, Sanders K, Kennedy TP and Hoidal JR 2009. RAGE Targeting Protects Against Hyperoxia-Induced Lung Injury in Mice. *Am J Resp Cell Mol Biol* 42(5):545-51.
40. **Reynolds PR**, Kasteller S, Cosio MG, Sturrock A, Huecksteadt TP and Hoidal JR 2008. RAGE: Developmental Expression and Positive Feedback Regulation by Egr-1 During Cigarette Smoke Exposure in Pulmonary Epithelial Cells. *AJP: Lung Cell Mol Physiol* 294(6):L1094-101.
41. **Reynolds PR** and Hoidal JR. 2006. Cigarette Smoke-Induced Egr-1 Upregulates Pro-Inflammatory Cytokines in Pulmonary Epithelial Cells. *Am J Resp Cell Mol Biol* 35(3):314-9.
42. **Reynolds PR** and Hoidal JR. 2005. Temporal-Spatial Expression and Transcriptional Regulation of  $\alpha_7$  Nicotinic Acetylcholine Receptor (nAChR) by TTF-1 and Egr-1 During Murine Lung Development. *J Biol Chem*. 280(37):32548-54.
43. Mukherjee TP, **Reynolds PR** and Hoidal JR 2005. Differential Effect of Estrogen Receptor Alpha and Beta Agonists on the Receptor for Advanced Glycation End Product Expression in Human Microvascular Endothelial Cells. *Biochim Biophys Acta* 1745(3):300-9.
44. **Reynolds PR**, Mucenski ML, LeCras TD, Nichols WC and Whitsett JA. 2004. Midkine is regulated by hypoxia and causes pulmonary vascular remodeling. *J Biol. Chem*. 279(35):37124-32.
45. **Reynolds PR**, Mucenski ML, and Whitsett JA. 2003. Thyroid Transcription Factor (TTF)-1 Regulates the expression of Midkine (MK) During Lung Morphogenesis. *Dev. Dyn*. 227:227-237.
46. **Reynolds PR**, Schaalje GB, and Seegmiller RE. 2003. Combination Therapy with Folic Acid and Methionine in the Prevention of Retinoic Acid-Induced Cleft Palate in Mice. *BDRA* 67:168-173.
47. Hansen, JM, **Reynolds PR**, Booth GW, Schaalje GB, and Seegmiller RE. 2000. Developmental Toxicity of Carbon Black Oil in Mice. *Teratology* 62:227-232.

## Submitted Publications

Undergraduate co-authors are underlined

1. Kumar V, Fleming T, Terjung S, Gorzelanny C, Gebhardt C, Agrawai R, Mall MA, Ranzinger J, Zeier M, Madhusudhan T, Ranjan S, Isermann B, Liesz A, Deshpande D, Haring HU, Biswas SK, **Reynolds PR**, Hammes HP, Peperkok R, Angel P, Herzig S, and Nawroth PP. 2016. Homeostatic RAGE-ATM interaction is essential for preventing genomic instability. *Science*, submitted.

2. Black CS, Creapeau PK, Sheffiend ID, Macdonald JR, Wooton DJ, Maek M, Eggett DL, **Reynolds PR**, and Kooyman DL. 2016. Identification of the tidemark line of calcification in osteoarthritic cartilage using a stain for alkaline phosphatase. *Osteoarthritis*, submitted.
3. Taylor OJ, Thatcher MO, Carr ST, Gibbs J, Trumbull AM, Gray HM, Winden DR, Pearson MJ, Tippetts TS, Holland WL, **Reynolds PR**, and Bikman BT. 2016. High-mobility group box 1 disrupts metabolic function with cigarette smoke exposure in ceramide-dependent manner. *J Diabetes Res*.
4. Sanders NT, Dutson DJ, Durrant JW, Lewis JB, Albright SC, Wilcox SH, Winden DR, Arroyo JA, Bikman BT, and **Reynolds PR**. 2016. Cigarette smoke extract (CSE) induces RAGE-mediated inflammation in gingival epithelial cells. *Archives of Oral Biology*, submitted.

### In-Preparation Publications

Undergraduate co-authors are underlined

1. Fredrickson A.C., Sefcik T.L. and **Reynolds P.R.** Low anti-coagulant 2-O, 3-O-desulfated heparin (ODSH) diminishes tobacco smoke induced pulmonary inflammation in mice. *In Preparation*.
2. **Reynolds P.R.** Web-based interactive resources enhance learning in undergraduate histology courses. *In Preparation*.

### ABSTRACTS: PRESENTED AT NATIONAL OR INTERNATIONAL MEETINGS

Undergraduate co-authors are underlined

1. Mejia C, Lewis JB, Mayment M, Monson T, **Reynolds PR** and Arroyo JA. 2016. Growth arrest-specific 6 (Gas6)/AXL signalling induces preeclampsia. *Placenta* 45:119.
2. Bodine JS, Gassman JR, Muñoz SA, Milner DC, Lewis AL, Dunaway TM, Egbert KM, Christiansen CE, Christiansen AR, Monson TD, Broberg DS, Arroyo JA, and **Reynolds PR**. 2016. Transgenic Up-Regulation of Claudin-6 Decreases Diesel Particulate Matter (DPM)-Induced Pulmonary Inflammation. *FASEB J* 30:305.11.
3. Lewis JB, Bodine JS, Milner DC, Lewis AL, Dunaway TM, Egbert KM, Albright SC, Merrill BJ, Monson TD, Watson MS, Burstedt ND, Smith QK, Gassman JR, Jergenson TR, Chavarria B, Broberg DS, Muñoz SA, Thomas DB, Arroyo JA, and **Reynolds PR**. 2016. Altered Inflammatory Responses In Tobacco Smoke-Exposed Mice That Over-Express The Tight Junctional Protein Claudin-6. *FASEB J* 30:305.12.
4. Mejia CA, **Reynolds PR**, and Arroyo JA. 2016. Placental expression of NFAT5, SLC5A3, and aldose reductase in gestational diabetes mellitus. *FASEB J* 30:851.5.
5. Jordan CJ, Lewis JB, Bodine JS, Lewis AL, Dunaway TM, Egbert KM, Monson TD, Ogden KC, Wright TJ, Mejia CA, **Reynolds PR** and Arroyo JA. 2016. Receptors for Advanced Glycation End-products (RAGE) inhibition protects form Intrauterine Growth Restriction (IUGR) during Second Hand Smoke (SHS) in Mice. *FASEB J* 30:1033.4.
6. Gassman JR, Lewis JB, Milner DC, Lewis AL, Bodine JS, Dunaway TM, Monson TD, Broberg DS, Arroyo JA, and **Reynolds PR**. 2016. Spatial expression of Receptor for Advanced Glycation End-Products (RAGE) in diverse tissue and organ systems differs following exposure to secondhand cigarette smoke. *FASEB J* 30:1b741.
7. Milner DC, Lewis JB, Winden DR, Gassman JR, Monson TD, Broberg DS, Muñoz SA, Ehrhardt C, Arroyo JA and **Reynolds PR**. 2016. Organic Cation Transporter Novel Type-1 (OCTN-1) And Pulmonary Responses to Secondhand Tobacco Smoke (SHS). *FASEB J* 30:50.4.
8. Mejia CA, Monson TD, Jordan CJ, Bikman BT, **Reynolds PR**, and Arroyo JA. 2016. Treatment with diet or insulin induces a different placental Ceramide expression during gestational diabetes mellitus (GDM). *FASEB J* 30:851.6.

9. Ehrhardt C, Selo MA, Clerkin CG, Talbot BN, Walsh JJ, Nakamichi N, Kato Y, Lewis JB, **Reynolds PR**, and Nikel S. 2016. Protective role of ergothioneine from tobacco smoke-induced oxidative stress in vitro and in vivo. *FASEB J* 30:982.1.
10. Napa K, Baeder AC, Richardson ST, Taylor OJ, Anderson SG, Wilcox SH, Winden DR, **Reynolds PR**, and Bikman BT. 2016. Gingival cells exposed to cigarette smoke extract induce muscle cell metabolic disruption. Presented at the American Association of Dental Research Annual Meeting. Los Angeles, CA, Mar 16-19, 2016.
11. Laub SG, Taylor OJ, **Reynolds PR**, and Bikman BT. 2016. Gingival cell smoke exposure disrupts skeletal muscle metabolic function. *FASEB J* 30:920.8.
12. Oliver OJ, Porter ME, **Reynolds PR**, and Bikman BT. 2016. HMGB1 mediates sidestream smoke-induced metabolic disruption. *FASEB J* 30:734.4.
13. Sanders NT, Dutson DJ, Durrant JW, Gollaher CJ, Lewis JB, Merrill BJ, Milner DC, Christiansen AR, Albright SC, Christiansen CE, Wilcox SH, Winden DR, Bikman BT, and **Reynolds PR**. 2016. Gingival epithelial cells exposed to cigarette smoke extract include RAGE-mediated inflammation. Presented at the American Association of Dental Research Annual Meeting. Los Angeles, CA, Mar 16-19, 2016.
14. Durrant JW, Gollaher CJ, Sanders NT, Dutson DJ, Lewis JB, Merrill BJ, Milner DC, Christiansen AR, Albright SC, Christiansen CE, Wilcox SH, Winden DR, Bikman BT, and **Reynolds PR**. 2016. Availability of TNF-alpha up-regulates inflammatory RAGE expression by gingival epithelia. Presented at the American Association of Dental Research Annual Meeting. Los Angeles, CA, Mar 16-19, 2016.
15. Lewis JB, Jimenez FR, Chavarria M, Gassman JR, Jergensen TR, Albright S, Morris R, Baker P, Christiansen C, Schrader T, Millner DC, Bodine JS, Arroyo JA, and **Reynolds PR**. 2015. Expression profile of Claudin family members in the developing lung. *Dev Biology* in press.
16. Arroyo JA, Mejia JF, Sittton ZE, Mejia CA, and **Reynolds PR**. 2015. Induction of intrauterine growth restriction (IUGR) by secondhand smoke (SHS): a role for the Receptor for Advanced Glycation End-products (RAGE) in the development of disease. SSR: <http://www.ssr.org/15Schedule>, <http://www.ssr.org/15SciProgram>
17. Mejia C, Johnston A, Lutz R, Arroyo JA, and **Reynolds PR**. 2015. Inhibition of trophoblast invasion by the growth arrest-specific 6 (Gas6) protein. *FASEB J* 29:684.10.
18. Alexander K, Lewis J, Mejia M, Howell B, **Reynolds PR**, and Arroyo JA. 2015. Differential Placental Expression of the Receptor for Advanced Glycation End-Products (RAGE) in Normal and Complicated Pregnancies. *FASEB J* 29:972.2.
19. Mika A, **Reynolds PR**, and Arroyo JA. 2015. Elevated Apoptosis in Ovine Intrauterine Growth Restriction (IUGR) is Associated with Increased Caspase 3 and 9 and Decreased Telomerase Activity. *FASEB J* 29:978.2.
20. Lewis J, Jimenez F, Chavarria M, Gassman J, Jergensen T, Schrader T, Millner D, Bodine J, Arroyo JA, and **Reynolds PR**. 2015. Expression Profile of Claudin Family Members in the Developing Lung. *FASEB J* 29:LB747.
21. Mejia C, Bahr B, **Reynolds PR**, and Arroyo JA. 2015. Nuclear and cytosolic expression of placental PKM2 in preeclampsia and intrauterine growth restriction. *FASEB J* 29:684.9.
22. Long E, Pettit N, Motwani R, **Reynolds PR**, and Seegmiller RE. 2015. Involvement of TGF-b1 in the initial phase of TMJ and knee osteoarthritis. *Arthritis and Cartilage* 23:A320.
23. Pettit N., Motwani R., Long E., **Reynolds P.R.** and Seegmiller R.E. 2015. Involvement of TGFb1 in the initial phase of TMJ osteoarthritis. *J Dent Res* 94A: 1144.
24. Jimenez F.R., Belgique S.T., Albright S.A., Jones C.M., and **Reynolds P.R.** 2014. Conditional pulmonary overexpression of Claudin 6 (Cldn6) during embryogenesis delays lung morphogenesis. APS Comparative Physiology Conference 2014.

25. Tippetts T., Winden D.R., Wagner M., Condie T., **Reynolds P.R.**, and Bikman B. 2014. Ceramide is necessary for cigarette smoke-induced reduced heart mitochondrial function. ADA Meeting 2014. *Diabetes* 63(S1): 1855-P, A447.
26. Nelson M.B., Tippetts T., Winden D.R., **Reynolds P.R.**, and Bikman B. 2014. RAGE activation reduces cardiomyocyte mitochondrial function in a ceramide-dependent manner. ADA Meeting 2014. *Diabetes* 63(S1): 447-P, A117.
27. Thatcher M., Tippetts T., Johnson I., Holub Z., Nelson M., Winden D.R., **Reynolds P.R.**, and Bikman B. 2014. Ceramide mediates cigarette smoke-induced skeletal muscle metabolic disruption. ADA Meeting 2014. *Diabetes* 63(S1): 1854-P, A447.
28. Wilhelm S., Mecham D., Chavez E.M., Kartchner J., Crepeau P., Anderson K., Vandruff J., Robinson M., Christensen I., Taylor K., **Reynolds P.**, and Kooyman D. 2014. Blocking of the receptor for advanced glycation end-products but not Toll-like receptor 4 attenuates the progression of OA. *FASEB J* 28:835.13.
29. Chavez C.M., Mecham D., Wilhelm S., Black C., Mitchell J., Anderson K., Graf J., Macdonald J., **Reynolds P.**, and Kooyman D. 2014. Knocking out RAGE disrupts natural repair of condylar cartilage during osteoarthritis. *FASEB J* 28:835.14.
30. Jimenez F.R., Lewis J.B., Belgique S.T., Wood T.T. and **Reynolds P.R.** 2014. Pulmonary expression and regulation of Cldn6 by tobacco smoke. *FASEB J* 28:834.3
31. Wood T.T., Winden D.R., Barton D.B., Betteridge B.C., Marlor D.R., Wright A.J., Jones C.M., Chavarria M., Rogers G.D., and **Reynolds P.R.** 2014. Targeted mice reveal a role for RAGE in an early inflammatory response to tobacco smoke. *FASEB J* 28:834.4.
32. **Reynolds, P.R.** 2013. Characterization of a new mouse model of COPD via conditional over-expression of RAGE by alveolar epithelium. Proc Phys Soc, Proc 37<sup>th</sup> IUPS, PCD055.
33. Thacher M.O., Brassfield E.S., Smith M.E., Nelson M.B., **Reynolds P.R.** and Bikman B.T. 2013. Smoking mediates smoking-induced insulin resistance. *FASEB J* 27:874.27.
34. Wilhelm S.K., Doxey A.S., Karchner J.Z., Vernderuff J., Anderson K., Draper C.S., Chavez E., **Reynolds P.R.**, and Kooyman D.L. 2013 Apoptosis associated with osteoarthritis is attenuated in mice lacking receptor for advanced glycation end products (RAGE). *FASEB J* 27:573.5.
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