

## CURRICULUM VITAE

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**EDUCATION: 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.

**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.

**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.

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

### PROFESSIONAL EXPERIENCE:

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

**Visiting Scientist (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

**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**Faculty

2007-present. Brigham Young is a predominantly undergraduate teaching institution. Current teaching responsibilities include departmental 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 teaching responsibilities in a graduate Cellular and Molecular Physiology course and an array of mentored undergraduate and graduate research courses are also held annually.

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.

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.

**Research**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.

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.

Graduate (PhD)

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.

Graduate (MS)

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.

Undergraduate

1998-09: Served as research director and managed students performing developmental toxicology studies. Studied 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.

**FUNDED EXTERNAL GRANTS AND FELLOWSHIPS:**

**A total of \$1,725,968.60 has been awarded from external entities since being hired at BYU**

|   |                     |
|---|---------------------|
| <b>NHLBI LRP Clinical Research Grant (2016-2017), PI</b>  | <b>\$7,927.65</b>   |
| National Institutes of Health: Heart Lung and Blood Institute<br>RAGE variability and the use of SAGEs in the treatment of smoke-induced inflammation |                     |
| <b>Clinical Innovator Grant (2016-2019), PI</b>   | <b>\$325,500.00</b> |
| Flight Attendant Medical Research Institute<br>RAGE and SAGE: Modeling secondhand smoke-induced COPD and therapeutic modalities                       |                     |
| <b>American Physiological Society Research Career Enhancement (2015)</b>  | <b>\$5,000.00</b>   |
| American Physiological Society<br>Characterizing the Nuclear Functions of Translocated RAGE   |                     |
| <b>Clinical Innovator Grant (2014-2017), Co-PI</b>  | <b>\$325,500.00</b> |
| Flight Attendant Medical Research Institute<br>Role of OCTN1 in tobacco-induced COPD  |                     |
| <b>Clinical Innovator Grant (2012-2016), PI</b>   | <b>\$325,500.00</b> |
| Flight Attendant Medical Research Institute<br>Systemic inflammation and Pulmonary RAGE expression  |                     |
| <b>American Physiological Society Research Career Enhancement (2011)</b>  | <b>\$5,000.00</b>   |
| American Physiological Society<br>Characterizing ATI Morphology in Lungs that Over-Express RAGE   |                     |
| <b>NHLBI LRP Clinical Research Grant (2010-2012)</b>  | <b>\$22,316.56</b>  |
| National Institutes of Health: Heart Lung and Blood Institute<br>Endothelial based mechanisms of COPD pathogenesis involving RAGE                     |                     |
| <b>NHLBI LRP Clinical Research Grant (2008-2010)</b>  | <b>\$28,724.48</b>  |
| National Institutes of Health: Heart Lung and Blood Institute<br>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<br>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<br>Transcription Factor Expression During Cigarette Smoke-Induced Lung Inflammation |              |
| <b>Ruth L. Kirwischstein National Research Service Award (2004-2006)</b>  |              |
| National Institutes of Health HL07636-15, Jeffrey Whitsett, PI  |              |
| <b>PHS Graduate Training Grant (2001-2004)</b>  |              |
| Developmental and Perinatal Endocrinology (HD07463)   |              |

#### **FUNDED INSTITUTIONAL GRANTS AND FELLOWSHIPS:**

**A total of \$93,000 has been internally awarded to my laboratory since being hired at BYU**

|  |             |
|--|-------------|
| <b>Life Sciences College Mentoring Supplement CEMENT Grant (2018), PI</b>            | \$5,000.00  |
| Brigham Young University, Provo UT 84602   |             |
| <b>BYU Mentoring Environment Grant (2017), PI</b>                                    | \$20,000.00 |
| Brigham Young University, Provo UT 84602   |             |
| <b>BYU Mentoring Environment Grant (2015), Co-I (PI: Cook lab utilized \$20,000)</b> | \$20,000.00 |
| Brigham Young University, Provo UT 84602   |             |
| <b>BYU Mentoring Environment Grant (2013), PI</b>                                    | \$20,000.00 |
| Brigham Young University, Provo UT 84602   |             |
| <b>BYU Mentoring Environment Grant (2011), PI</b>                                    | \$20,000.00 |
| Brigham Young University, Provo UT 84602   |             |
| <b>BYU Graduate Mentoring Award (2011), PI</b>                                       | \$4,000.00  |
| Brigham Young University, Provo UT 84602   |             |
| <b>BYU Gerontology Grant (2011), Co-PI (PI: Thomson lab utilized \$10,000)</b>       | \$10,000.00 |
| Brigham Young University, Provo UT 84602   |             |
| <b>BYU Mentoring Environment Grant (2009), PI</b>                                    | \$20,000.00 |
| Brigham Young University, Provo UT 84602   |             |
| <b>BYU Graduate Mentoring Award (2009), PI</b>                                       | \$4,000.00  |
| Brigham Young University, Provo UT 84602   |             |

#### **PENDING GRANT APPLICATIONS:**

|  |                |
|--|----------------|
| <b>National Institutes of Health R01, Co-PI</b>                                    | \$1,999,357.00 |
| National Institutes of Health, National Institute of Environmental Health Sciences |                |

RAGE and SAGE: Molecular orchestration of smoke-induced IUGR and therapeutic alleviation of long term health outcomes.

**National Institutes of Health R15, Co-PI**

\$300,000.00

National Institutes of Health, National Institute of General Medical Sciences

The induction of preeclampsia by novel growth arrest-specific 6 (Gas6A)-mediated mechanisms

**STUDENT GRANTS, FELLOWSHIPS and AWARDS:**

**Brigham Young University Graduate Student Research Travel Award, 2017**

Kelsey Hirschi, PhD student

**Brigham Young University Undergraduate ORCA Award, 2017**

Todd Dunaway: Maternal-fetal interactions and the induction of preeclampsia by growth arrest-specific 6 (Gas6)/AXL signaling

**Brigham Young University Undergraduate ORCA Award, 2017**

Brent Kimbler: RAGE Functions during Secondhand Smoke-Induced Bronchopulmonary Dysplasia

**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: Ferrin L. Orton Teaching and Learning Faculty Fellowship (2017)**

Brigham Young University

**College of Life Sciences Outstanding Teaching Award (2017)**

Brigham Young University

**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**); Editorial Board Member (2014-present)  
Am J of Respiratory Cell and Mol Biology (**IF=4.080**); Editorial Board Member (2014-present)  
International Journal of Molecular Sciences (**IF=3.257**); 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, Ad hoc**

Life Sciences; I. Glenn Sipes, Ph.D., Editor (**IF=2.702**)  
Am J 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**)  
Am 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)  
Int 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)  
Int J of Chronic Obstructive Pulmonary Disease; Richard E. Russell, Editor in Chief (IF=3.157)  
Biochimica et Biophysica Acta: General Subjects; David Litchfield, Executive Editor (IF=4.702)  
BMC Public Health; Natalie Pafatis, Editor in Chief (IF=2.265)

### **Grant Review Study Sections or Steering Meetings**

National Institutes of Health, Study Section Member, 2017  
Scientific Review Group: Tobacco Regulatory Science  
2018/01 ZRG1 BST-H (55) R (R01, R21, R03)

Australia National Health and Medical Research Council (NHMRC), Invited Referee 2017  
Section: *Cardiovascular Medicine and Haematology*  
Targeting immunosenescent innate T cells in COPD

FAMRI Competitive Grant Review Committee, Panelist 2017  
Panel: *Current and Ongoing COPD Funding Outlook and Directions*  
Invited to participate in meetings aimed to educate the FAMRI Board of Trustees on the current state of translational science and how best to establish funding objectives to explore effective treatments and cures for COPD and related diseases.

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 a predominantly undergraduate teaching institution. As such, all faculty members are given primary teaching responsibilities for courses designed for majors or non-majors in their respective departments. Modest graduate programs and faculty research productivity must be balanced so that its central teaching mission is maintained.

## Current Courses

### **PDBio 325 Tissue Biology:**

This course is a challenging class required of PDBio Department majors and many pre-professional students enroll. The course covers characteristics of histology including pathology and development. Students attend two weekly lectures (1 hour each) and a weekly laboratory section for 3 hours.

| 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 2017   | 2-3           | 28             | 50           | 4.8 (Department Average = 4.4) |
| F 2017   | 2-3           | 28             | 77           | 4.8 (Department Average = 4.5) |

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

### **PDBio 484 Human Embryology:**

This course is an advanced capstone course for majors that covers anatomical, molecular, and clinical aspects of embryology. The class serves majors preparing for professional school. Students attend 3 hours of lecture per week.

| 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 Leave |                |              |                 |                     |
| 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 2017   | 3             | 44             | 39           | 4.9 (Department Average 4.5)   |

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

### **PDBio 694 Graduate Research Presentation:**

This 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 Leave |                   |                 |                     |

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

### **PDBio 601 Cellular and Molecular Physiology:**

This course 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 |
|----------|------------------|----------------|-------------------|
| 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 Leave |                |                   |
| F 2014   | 3                | 2              | 5                 |
| F 2015   | 3                | 2              | 7                 |
| F 2016   | 3                | 2              | 5                 |
| F 2017   | 3                | 2              | 3                 |

F = Fall semester

### **PDBio 295, 494 and 495 Undergraduate and Advanced Undergraduate Research:**

These courses are designed to provide research credit for mentored undergraduate students in various phases of research sophistication.

|                   | 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 | 14   | 6   | 11 |      |     |   |      |     |   |

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

### **Undergraduate Student Mentoring (number of students involved per year)**

Students work in my laboratory on research projects over the course of 1-3 years and receive direct mentoring throughout their tenure. Students then often apply to 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 journal clubs designed to enhance understanding of the field as it relates to our research program.

|      |    |      |    |      |    |      |    |      |    |
|------|----|------|----|------|----|------|----|------|----|
| 2007 | 4  | 2008 | 4  | 2009 | 21 | 2010 | 26 | 2011 | 28 |
| 2012 | 24 | 2013 | 27 | 2014 | 26 | 2015 | 28 | 2016 | 29 |
| 2017 | 23 |      |    |      |    |      |    |      |    |

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

1. Stephen D. Kasteler, 2006. "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. Kelsey Phillips, MS Student, BYU. 2015-present. Role: Graduate Committee Member
2. Aimee Hodson, MS Student, BYU. 2015-2016. Role: Graduate Committee Member
3. Rebecca Kimball, MS Student, BYU. 2014-2016. Role: Graduate Committee Member
4. Kristen Mecham, MS Student, BYU. 2014-2015. Role: Graduate Committee Member
5. Ivan Arano, MS Student, BYU. 2014-2015. Role: Graduate Committee Member
6. Michael Nelson, MS Student, BYU. 2013-2015. **Role: Graduate Committee Chair**
7. Elizabeth Chavez, MS Student, BYU. 2012-2014. Role: Graduate Committee Member
8. Tyler Wood, MS Student, BYU. 2013-2014. **Role: Graduate Committee Chair**
9. Jeffrey A. Stogsdill, MS Student, BYU. 2011-2012. **Role: Graduate Committee Chair**
10. 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. Caleb Cornaby, PhD Student, BYU. 2014-2017. Role: Graduate Committee Member
4. Nafiseh Poornejad, PhD Student, BYU. 2014-2017. Role: Graduate Committee Member
5. Joshua Lewis, PhD Student, BYU. 2014-2017. **Role: Graduate Committee Chair**
6. Felix Jimenez, PhD Student, BYU. 2012-2015. **Role: Graduate Committee Chair**
7. Kevin Tuttle, PhD Student, BYU. 2012-2017. Role: Graduate Committee Member
8. Mikayla Thatcher, PhD Student, BYU. 2012-2015. Role: Graduate Committee Member
9. Duane Winden, PhD Student, BYU. 2013-2014. **Role: Graduate Committee Chair**
10. Jason S. Adams, PhD Student, BYU. 2009-2012. Role: Graduate Committee Member

## MEETING ATTENDANCE AND PRESENTATIONS

1. Congress of the International Society of Developmental Biologists, Singapore (2017)
2. American Association for Dental Research, San Francisco, CA (2017)
3. Experimental Biology International Meeting, Chicago, IL (2017)
4. FAMRI Scientific Research Symposium, Miami, FL (2017)
5. American Association for Dental Research, Los Angeles, CA (2016)
6. Experimental Biology International Meeting, San Diego, CA (2016)
7. American Thoracic Society International Conference: San Francisco, CA (2016)
8. FAMRI Scientific Research Symposium, Miami, FL (2016)
9. National Institutes of Health Regional Seminar, Baltimore, MD (2016)
10. Experimental Biology International Meeting, Boston, MA (2015)
11. FAMRI Scientific Research Symposium, Miami, FL (2015)
12. Society for the Study of Reproduction, San Juan, Puerto Rico (2015)
13. Society for Developmental Biology Annual Meetings, Snowbird, Utah (2015)
14. Experimental Biology International Meeting, San Diego, CA (2014)
15. FAMRI Scientific Research Symposium, Miami, FL (2014)
16. American Diabetes Association Meetings, San Francisco, CA (2014)
17. Am Society for Reproductive Immunology 34<sup>th</sup> Annual Meeting, New York, NY (2014)
18. International Union of Physiological Sciences Congress: Birmingham, England (2013)
19. Experimental Biology International Meeting, Boston, MA (2013)
20. Society for Developmental Biology Annual Meetings, Montreal, Canada (2012)
21. FAMRI Scientific Research Symposium, Miami, FL (2012)
22. Experimental Biology International Meeting, San Diego, CA (2012)
23. Gordon Research Conference: Lung Development, Injury and Repair, Newport, RI (2011)
24. Experimental Biology International Meeting, Washington DC (2011)
25. Society for Developmental Biology Annual Meetings, Chicago, IL (2011)
26. Experimental Biology International Meeting, Anaheim, CA (2010)
27. American Thoracic Society International Conference, New Orleans, LA (2010)
28. FAMRI Scientific Research Symposium, Miami, FL (2010)
29. International Society for Developmental Biologists, Edinburgh, Scotland (2009)
30. American Thoracic Society International Conference, San Diego, CA (2009)
31. FAMRI Scientific Research Symposium, Boston, MA (2009)
32. American Thoracic Society International Conference, Toronto, Canada (2008)
33. Experimental Biology International Meeting, San Diego, CA (2008)
34. FAMRI Scientific Research Symposium, Boston, MA (2008)
35. American Thoracic Society International Conference, San Francisco, CA (2007)
36. First Pan American Conference in Developmental Biology, Cancun, Mexico (2007)
37. FAMRI Scientific Research Symposium, Miami, FL (2007)
38. Society for Developmental Biology Annual Meetings, Ann Arbor, MI (2006)

39. 100<sup>th</sup> American Thoracic Society International Conference: San Diego, CA (2005)
40. Society for Developmental Biology Annual Meetings, San Francisco, CA (2005)
41. Annual International Vascular Biology Meeting, Toronto, Canada (2004)
42. American Thoracic Society International Conference, Seattle, WA (2003)
43. Annual Graduate Research Symposium, University of Cincinnati; Cincinnati, OH (2002)
44. Teratology International Meetings, Montreal, Canada (2001)

## INVITED ORAL PRESENTATIONS AND LECTURES

1. **American Association for Dental Research Meeting, San Francisco, CA (2017)** "Gingival cells exposed to e-cigarette liquid express differential recognition receptors". Oral Presentation.
2. **American Association for Dental Research Meeting, San Francisco, CA (2017)** "Cigarette Smoke Extract Increases Invasion in Ca9-22 Gingival Cancer Cells". Oral Presentation.
3. **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.
4. **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.
5. **Experimental Biology International Meeting, San Diego, CA (2016)** "Transgenic Up-Regulation of Claudin-6 Decreases Diesel Particulate Matter (DPM)-Induced Pulmonary Inflammation". Oral Presentation.
6. **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.
7. **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"
8. **University Hospitals and Clinics, University of Heidelberg, Department of Inner Medicine (2013)**. "RAGE: Pulmonary functions and disease modeling". Oral Presentation.
9. **Experimental Biology International Meeting, Boston, MA (2013)** "Developmental expression and transcriptional regulation of claudin-6 in the murine lung". Oral Presentation.
10. **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.
11. **Experimental Biology International Meeting, Boston, MA (2013)** "RAGE signaling influences diesel particulate matter-induced inflammation in primary alveolar macrophages". Oral Presentation.
12. **Brigham Young University Physiology and Developmental Biology Seminar Series, Provo, UT (2012)** "The RAGE of ALI: Conserved Pathways of Inflammatory Disease". Oral Presentation.
13. **Experimental Biology International Meeting, San Diego, CA (2012)** "RAGE signaling influences tobacco smoke-induced inflammation by pulmonary macrophages". Oral presentation.
14. **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.

15. **FAMRI Scientific Research Symposium, Miami, FL (2012)** “Characterization of a new mouse model of COPD via conditional over-expression of RAGE”. Platform Oral Presentation.
16. **Roseman University of Health Sciences (2011-2016)** “Histology and Embryology for the first year Dental Student”. Oral Presentation Series.
17. **Roseman University of Health Sciences (2011-2016)** “Pulmonary Biology for the first year Dental Student”. Oral Presentation Series.
18. **School of Pharmacy and Pharmaceutical Sciences, Trinity College, Dublin Ireland (2011)** “Why all the RAGE: insight into lung development and disease”. Oral Presentation.
19. **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.
20. **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.
21. **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.
22. **Southern Utah University Spring Biology Seminar Series, Cedar City, UT (2010)** “Correlations between RAGE and Lung Disease”. Oral Presentation
23. **Brigham Young University Physiology and Developmental Biology Seminar Series, Provo, UT (2010)** “RAGE and Insights into Pulmonary Disease”. Oral Presentation.
24. **FAMRI Scientific Research Symposium, Miami, FL (2009)** “The RAGE of Smoke Induced Pulmonary Disease”. Platform Oral Presentation.
25. **Annual International Vascular Biology Meeting, Toronto, Canada (2004)** “Midkine regulates pulmonary vascular remodeling during hypoxia”. Oral Presentation.
26. **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. Lewis JB, Jimenez FR, Merrell BJ, Kimble B, Arroyo JA, and **Reynolds PR**. 2017. The expression profile of Claudin family members in the developing mouse lung and expression alterations resulting from exposure to secondhand smoke (SHS). *Exp Lung Res*, doi: 10.1080/01902148.2017.1409846.
2. Chapman S, Mick M, Hall P, Mejia C, Sue S, Wase BA, Nguyen MA, Whisenant EC, Wilcox SH, Winden DR, **Reynolds PR**, and Arroyo JA. 2017. Cigarette smoke extract induces oral squamous cell carcinoma cell invasion in a receptor for advanced glycation end-product-dependent manner. *Eur J Oral Sci*, doi: 10.1111/eos.12395.
3. Lewis JB, Mejia C, Jordan C, Monson TD, Bodine JS, Dunaway TM, Egbert KM, Lewis AL, Wright TJ, Ogden KC, Broberg DS, Hall PD, Nelson SM, Hirschi KM, **Reynolds PR** and Arroyo JA. 2017. Inhibition of the receptor for advanced glycation end-products (RAGE) protects from secondhand smoke (SHS)-induced intrauterine growth restriction (IUGR) in mice. *Cell Tissue Res*, 2017 Sep 26. doi: 10.1007/s00441-017-2691-z.

4. Kumar V, Fleming T, Terjung S, Gorzelanny C, Gebhardt C, Agrawal R, Mall MA, Ranzinger J, Zeier M, Madhusudhan T, Ranjan S, *Iserman B*, Liesz A, Deshpande D, Häring HU, Biswas SK, **Reynolds PR**, Hammes HP, Peperkok R, Angel P, Herzig S and Nawroth PP. 2017. Homeostatic nuclear RAGE-ATM interaction is essential for efficient DNA repair. *Nuc Acid Res*, 2017 Aug 9. doi: 10.1093/nar/gkx705.
5. Poornejad N, Buckmiller E, Schaumann L, Wang H, Wisco J, Roeder B, **Reynolds P**, and Cook A. 2017. Re-epithelialization of whole porcine kidneys with renal epithelial cells. *J Tissue Eng* 8:1-22, DOI 10.1177/2041731417718809.
6. Taylor OJ, Thatcher MO, Carr ST, Gibbs J, Trumbull AM, Harrison ME, Winden DR, Pearson MJ, Tippetts TS, Holland WL, **Reynolds PR**, and Bikman BT. 2017. High-mobility Group Box 1 disrupts metabolic function with cigarette smoke exposure in a ceramide-dependent manner. *Int J Mol Sci*. 18(5):1099; doi: 10.3390/ijms18051099.
7. Napa K., Baeder AC, Witt JE, Rayburn ST, Miller MG, Dallon BW, Gibbs JL, Wilcox SH, Winden DR, **Reynolds PR**, and Bikman BT. 2017. LPS from *P. Gingivalis* negatively alters gingival cell mitochondrial bioenergetics. *Int J Dentistry* 2017: 2697210.
8. 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* 22(5): 710-718.
9. Lewis JB, Hirschi KM, Arroyo JA, Bikman BT, Kooyman DT, and **Reynolds PR**. 2017. Plausible roles for RAGE in conditions exacerbated by direct and indirect (secondhand) smoke exposure. *Int J Mol Sci*. 18(3):652; doi:10.3390/ijms18030652.
10. Sanders NT, Dutson DJ, Durrant JW, Lewis JB, Wilcox SH, Winden DR, Arroyo JA, Bikman BT, and **Reynolds PR**. 2017. Cigarette Smoke Extract (CSE) Induces RAGE-Mediated Inflammation in the Ca-9-22 Gingival Carcinoma Epithelial Cell Line. *Archives of Oral Biology* 80:95-100.
11. Black CS, Creapeau PK, Sheffiend ID, Macdonald JR, Wooton DJ, Maek M, Eggett DL, **Reynolds PR**, and Kooyman DL. 2017. Identification of the tidemark line of calcification in osteoarthritic cartilage using a stain for alkaline phosphatase. *J Arthritis* 6:230. Doi:10.4172/2167-7921.1000230.
12. 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 42(10):440-452.
13. 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*, 2016 Oct 17;13(10). pii: E1018.
14. 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.
15. 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.
16. Chavez EM, Mechem 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.



17. 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.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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
23. 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.
24. 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.
25. 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.
26. 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*, 2015;59(10-12):479-85.
27. 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.
28. 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.
29. 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.
30. 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.

31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.
37. 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.
38. 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.
39. 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. *Archives in Oral Biology* 58(9):1092-9.
40. 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.
41. 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.
42. 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.
43. **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.
44. 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.
45. **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.

46. **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.
47. **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.
48. 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.
49. **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.
50. **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.
51. **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.
52. **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.
53. 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.
54. **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.
55. **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.
56. **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.
57. 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. Lewis JB, Bodine JS, Gassman JR, Munoz SA, Milner DC, Dunaway DM, Egbert KM, Monson TD, Broberg DS, Arroyo JA, and **Reynolds PR**. 2017. Transgenic up-regulation of Claudin-6 decreases fine diesel particulate matter (DPM)-induced pulmonary inflammation. *Environ Sci and Poll*, submitted.
2. Hirschi KM, Chapman S, Hall P, Ostergar A, Winden DR, **Reynolds PR**, and Arroyo JA. Gas6 induced invasion of oral squamous cell carcinoma (OSCC) cells. *Archives of Oral Biol*, submitted.
3. Mejia JF, Mefjia CA, Witt JE, Hirschi KM, **Reynolds PR**, Bikman BT, and Arroyo JA. 2017. Treatment with diet or insulin induces differential placental ceramide expression during gestational diabetes mellitus (GDM). 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. **Reynolds PR.** 2017. Over-Expression of Receptors for Advanced Glycation End-Products (RAGE) Causes Anomalous Epithelial Cell Survival and Differentiation in the Embryonic Murine Lung. International Society for Developmental; Biologists Congress. Singapore.
2. Whisenant EC, Wase BA, Nguyen MA, Mejia C, Wilcox SH, **Reynolds PR** and Arroyo JA. 2017. Gas6 Increases Invasion of Ca9-22 Gingival Cancer Cells. AADR poster.
3. Wase BA, Nguyen MA, Whisenant EC, Mejia C, Wilcox SH, **Reynolds PR** and Arroyo JA. 2017. Inhibition of AXL Receptors Decreases Invasion of Ca9-22 Cells. AADR poster.
4. Sue S, Mick M, **Reynolds PR**, Mejia C, Wilcox SH and Arroyo JA. 2017. Semi-Synthetic Glycoaminoglycan Ethers Inhibit Ca9-22 Cell Invasion Induced by CSE. AADR poster.
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