May 8th, 2013

Curriculum Vitae

Joy Lincoln, PhD

Principal Investigator
Center for Cardiovascular and Pulmonary Research
Nationwide Children's Hospital Research Institute
Associate Professor (Tenure track)
The Ohio State University
700 Children's Drive, Columbus, OH, 43205
Email: joy.lincoln@nationwidechildrens.org
Phone: 614-722-5152

Education:

1998-2002 Ph.D Molecular and Developmental Biology
Mentor: Dr. Nicholas Hole, PhD
University of Durham, UK

1999 Teaching Certificate in Higher Education
University of Durham, UK

1995-1998 BSc
1st Class Honors, Biomedical Sciences
University of Durham, UK

Research Experience:

2011-TPD Principal Investigator, The Research Institute at Nationwide Children's, Columbus, Ohio
Associate Professor, Department of Pediatrics, The Ohio State University, Columbus, Ohio

2006-2011 Tenure Track Assistant Professor
Department of Molecular and Cellular Pharmacology, Department of Medicine, University of Miami, Leonard M. Miller School of Medicine, Miami, Florida

2002-2006 Postdoctoral Research Fellow
Division of Molecular Cardiovascular Biology, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio
Mentor: Katherine E. Yutzey, PhD

Publications:

1. Ge Tao, Lindsey J. Miller and **Joy Lincoln.** Snai1 is important for avian epicardial cell transformation and motility**.** *Developmental Dynamics. Accepted, 2013.* Impact Factor: 3.018

2. Kevin Bosse PhD, Chetan P. Hans PhD, Ning Zhao MS, Sara N. Koenig BA, Nianyuan Huang BS, Anuradha Guggilam PhD, Stephanie LaHaye, Ge Tao PhD, Pamela A. Lucchesi PhD, **Joy Lincoln PhD,** Brenda Lilly PhD and Vidu Garg MD. Endothelial nitric oxide signaling regulates Notch1 in aortic valve disease. *Journal of Molecular and Cellular Cardiology. Accepted, 2013.* Impact Factor: 5.166

3. Danielle J. Huk, Harriet L. Hammond, Hiroyuki Kegechika and **Joy Lincoln.** Increased dietary intake of vitamin A promotes aortic valve calcification in vivo. *Arteriosclerosis, Thrombosis, and Vascular Biology. [Epub ahead of print], 2012* Impact Factor: 6.368

4. Ge Tao, PhD, Agata K. Levay, MS, Jacqueline D. Peacock, PhD, Nicole H. Purcell, PhD, Jose R. Pinto, PhD, Maarten L. Galantowicz, BS, Manuel Koch, PhD, Pamela A. Lucchesi, PhD, David E. Birk, PhD and **Joy Lincoln, PhD.** Collagen XIV is important for growth and structural integrity of the myocardium. *Journal of Molecular and Cellular Cardiology, 53(5):626-38, 2012.* Impact Factor: 5.166

5. Ge Tao, James D. Kotick and **Joy Lincoln**. Heart Valve Development, Maintenance and Disease: The Role of Endothelial Cells. *Current Topics In Developmental Biology 100:203-32, 2012* ***Invited Review.*** Impact Factor: 4.62

6. Lloye M. Dillon, Sion L. Williams, Aline Hida, Jacqueline D. Peacock, Tomas A. Prolla, **Joy Lincoln** and Carlos T. Moraes. Increased Mitochondrial Biogenesis in Muscle Improves Aging Phenotypes in the mtDNA Mutator Mouse. *Human Molecular Genetics 21(10):2288-97, 2012.* Impact Factor: 7.636

7. Marco Ricci, MD, Yanji Xu, PhD, Harriet L. Hammond, MS, David A. Willoughby, PhD, Lubov Nathanson, PhD, Maria M. Rodriguez, MD, Matteo Vatta, PhD, Steven E. Lipshultz, MD and **Joy Lincoln, PhD.** Alternative RNA splicing and gene expression profiles in early stage Hypoplastic Left Heart Syndrome. *PLoS ONE, 7(1);e29784 Epub 2012.* Impact Factor: 4.4

8. Peacock, J.D., Huk, D.J., Ediriweera, H., **Lincoln, J.** Transcriptional regulation of *Spp1* by Sox9 in heart valves and chondrocytes. *PLoS ONE, 6(10):e26769, Epub 2011.* Impact Factor: 4.4

9. Faul C*, Amaral AP*, Oskouei B*, Hu MC, Sloan A, Isakova T, Gutiérrez OM, Aguillon-Prada R, **Lincoln J**, Hare JM, Mundel P, Morales A, Scialla J, Fischer M, Soliman EZ, Chen J, Go AS, Rosas SE, Nessel L, Townsend RR, Feldman HI, St. John Sutton M, Ojo A, Gadegbeku C, Di Marco GS, Reuter S, Kentrup D, Tiemann K, Brand M, Hill JA, Moe OW, Kuro-o M, Kusek JW, Keane MG, Wolf M. Fibroblast Growth Factor 23 Induces Left Ventricular Hypertrophy. *Journal of Clinical Investigation, 121(11):4393-408, 2011.* Impact Factor: 13.069

10. Ge Tao, Agata K. Levay, Thomas Gridley and **Joy Lincoln**. Mmp15 is a direct target of Snai1 during endothelial to mesenchymal transformation and endocardial cushion development. *Developmental Biology, 359(2):209-21, 2011.* Impact Factor: 4.069

11. Ricci, M., Panos, A.L., **Lincoln, J.,** Salerno, T.A. and Warshauer, L. Is aviation a good model to study human errors in health care? *American Journal of Surgery, Sep 2, Epub.* Impact Factor:

12. Ricci, M. and **Lincoln, J.** Molecular markers of cardiomyopathy in cyanotic heart disease. *Progress in Pediatric Cardiology, 32(1):19-19-23, 2011.* Impact Factor:

13. **Lincoln, J.** and Yutzey, K.E. Molecular and developmental mechanisms of congenital heart valve disease. *Invited review Journal of Birth Defects Research Part A Clin Mol Teratol. 91(6):526-34, 2011.* Impact Factor: 1.931

14. Ricci, M. Mohapatra, B., Urbiztondo, A., Birusingh, R.J., Morgado, M., Rodriguez, M.M., **Lincoln, J.,** Vatta, M. Upregulation of TFG-β/BMP signaling pathway in the Right Ventricular Myocardium of Newborns with Hypoplastic Left Heart Syndrome. *Journal of Cardiac Failure 16(8):628-34, 2010.* Impact Factor: 3.66

15. Peacock, J.D., Levay, A.K., Gillaspie, D.B., Tao, G., **Lincoln, J.** Reduced Sox9 function promotes heart valve calcification phenotypes in vivo. *Circulation Research 106(4):712-9, 2010.* Impact Factor: 9.489

16. Peacock, J.D., Lu, Y., Kadler, K.E., and **Lincoln, J**. Temporal and Spatial expression of collagens during murine atrioventricular heart valve development and maintenance. *Developmental Dynamics (237)10;3051-8, 2008*. Impact Factor: 3.018

17. Levay, A.K., Peacock, J.D., Lu Y., Hinton Jr., Koch, M., R.B., Kadler, K.E., **Lincoln, J**. Scleraxis is required for cell lineage differentiation and extracellular matrix remodeling during murine heart valve formation in vivo. *Circulation Research 103(9): 948-56, 2008*. Impact Factor: 9.489

18. **Lincoln J.,** Kist, R., Scherer, G. Yutzey, K.E. Sox9 is required for valve precursor cell expansion and extracellular matrix organization during mouse heart valve development. *Developmental Biology 305(1):120-32, 2007.* Impact Factor: 4.069

19. **Lincoln J.,** Florer, J.B., Deutsch, G.H., Wenstrup, R.J., Yutzey, K.E. ColVa1 and ColXIa1 are required myocardial morphogenesis and heart valve development. *Developmental Dynamics, 235(12);3295-3305, 2006.*

20. Hinton Jr., R.B*., **Lincoln, J*.,** Deutsch, G., Osinska, H., Benson, W., Yutzey, K.E. Extracellular matrix remodeling and organization in developing and diseased aortic valves. *Circulation Research 98(11):1431-8, 2006 .* *Both authors contributed equally. **Front cover article.**

21. **Lincoln J.,** Lange, A.L., Yutzey, K.E. "Hearts and Bones": Shared regulatory mechanisms in heart valve, cartilage, tendon and bone. Review article. *Developmental Biology 294; 292-302, 2006.*

22. **Lincoln J.,** Alfieri, C.M., Yutzey, K.E. BMP and FGF regulatory pathways control cartilage- and tendon-like cell lineage differentiation of heart valve precursor cells. *Developmental Biology 292;290-302, 2006.*

23. **Lincoln J.,** Alfieri, C.M., Yutzey, K.E. Development of heart valve leaflets and supporting apparatus in chicken and mouse embryos. *Developmental Dynamics 229 (4), 2004*. **Front cover article**.

24. Lako, M., Lindsay, S., **Lincoln, J.,** Cairns, P.M., Armstrong, L., Hole, N. Charaterisation of *Wnt* gene expression during the differentiation of murine embryonic stem cells in vitro: role of *Wnt3* in enhancing haematopoietic differentiation. *Mechanisms of Development 103, 49-59 2001.*

25. Armstrong, L., Lako, M., **Lincoln, J.,** Cairns, P.M., Hole, N. *mTert* expression correlates with telomerase activity during the differentiation of murine embryonic stem cells. *Mechanisms of Development 97, 109-116, 2000.*

Research Support:

Ongoing Support:

08/01/2008 - 07/31/2013: NIH R01 (1R01HL091878)
PI: Joy Lincoln (50% effort)
$250,000 direct costs/yr
"Molecular regulation of heart valve development and function"
FGF-ERK signaling and in vivo function of scleraxis during heart valve formation.

06/01/2012-05/31/2013: Graduate research supplement to promote diversity
NIH R01 (1R01HL091878)
Research supplement to promote diversity in health-related research
$54,151 total cost

10/01/2011-09/30/2016: Nationwide Children's Hospital Institutional Start Up Funds

01/01/2013-12/30/2015: American Heart Association Pre-doctoral Fellowship (13PRE13930008)
PI: Danielle Huk, Sponsor: Joy Lincoln
"The role of Sox9 in Calcific Aortic Valve Disease"
Examining the role of Sox9 in calcific aortic valve pathogenesis.

Pending Support:
12/01/13-11/30/2018: NIH R01 (1R01HL117946-A1)
PI: Joy Lincoln
"The role of Sox9 in heart valve development and disease"
***Scored 32 (23 percentile) for A0**

07/01/2013-06/30/2015: American Heart Association Grant In Aid (13GRNT16120005)
PI: Joy Lincoln
"The role of Sox9 in heart valve development and disease"

Completed Support:
07/01/2010-06/30/2012: American Heart Association Pre-doctoral Fellowship (10PRE4360052)
PI: Ge Tao, Sponsor: Joy Lincoln
"The role of snail in heart valve development and disease"
Examining the role of Snai1 in heart valve development and understanding its contribution to adult valve disease.

07/01/2007 - 06/30/2011: American Heart Association Scientist Development Grant (0735220N)
PI: Joy Lincoln
$66,000 direct costs/yr
"Molecular and cellular regulation of heart valve cell lineage diversification and differentiation"
Scleraxis regulation of heart valve precursor cells
(Inactivated due to scientific overlap with 1R01JL091878)

07/01/2010-06/30/2012: NIH F32 Postdoctoral Fellowship (F32HL099035)
PI-Derek Rosenzweig, Sponsor-Lincoln, (Inactivated to due Postdoc relocation)
"The role of Scleraxis in heart valve development and disease"
Defining the mechanisms of the bHLH transcription factor, Scleraxis in heart valve precursor cell fate.

07/01/2007 - 06/30/2010: Florida Biomedical Research Programs, James & Esther King (07KN-07)
PI: Joy Lincoln
$125,000 direct costs/yr
"Molecular regulation of heart valve development and disease"
Determining Sox9 function in connective tissue homeostasis in embryonic and adult heart valves

07/01/2009-06/30/2011: American Heart Association Pre-doctoral Fellowship (09PRE2050088)
PI: Jacqueline Peacock, Sponsor: Joy Lincoln
"The role of sox9 in heart valve development and disease"

Defining the role of Sox9 promoting cartilaginous and preventing osteogenic matrices in developing and mature embryonic and adult heart valves

12/01/2010-11/30/2011: Diversity Administration Supplement (1R01HL091878)
$30,000 total costs/yr: Inactivated due to relocation

08/01/2009-7/31/2011: Administration Supplement (1R01HL091878)
$79,560 total costs/yr: Inactivated due to relocation

Awards and Honors:

2013 Invited Speaker "Bench to Outcomes Seminar Series (BOSS)" The Research Institute at Nationwide Children's Hospital, Columbus, OH
2012 Invited Speaker "Career Development for Graduate Students", Cincinnati Children's Hospital Medical Center
2012 Invited Speaker, "A complex interplay to build the heart"; Physiology of Development, Experimental Biology 2012, San Diego, CA
2012 Invited Chair "Epicardial and Heart Valve Development" Platform Session, Weinstein Cardiovascular Development Meeting, Chicago, IL
2012 Invited Lecture, Basic and Translational Science Seminar Series, The Research Institute at Nationwide Children's Hospital, Columbus, OH
2011 Invited review for Current Topics in Developmental Biology
2011 Invited Speaker, "Spring Symposium of the Cardiovascular Developmental Biology Center", Medical University of South Carolina
2011 Invited Lecture, The Research Institute at Nationwide Children's Hospital, Columbus, OH
2011 Invited Chair "Heart Valve Development" Platform Session, Weinstein Cardiovascular Development Meeting, Cincinnati, OH
2010 Invited Lecture, Department of Biological Sciences, University of Durham, Durham, UK
2010 Invited Speaker: "New insights into cell & tissue interactions in cardiovascular development and disease workshop" Centro Nacional de Investigaciones Cardiovasculares, Madrid
2010 Invited Lecture, Department of Cell Biology and Anatomy, University of Miami, Miami, FL
2010 Director Postdoctoral Programs Office, University of Miami
2009 Invited Lecture, Stem Cell Institute, University of Miami, Miami, FL
2008 Invited Speaker, Weinstein Cardiac Development Conference, Houston, TX
2008 Invited Speaker, Heart Valve Biology and Tissue Engineering Meeting
2007 Florida Cardiovascular Researcher of the Year ($25,000 award, Florida Heart Research Institute)
2007 Invited Speaker "Collagen" Gordon Conference, New London, NH
2006 Honorable Mention for Scientific Excellence, Weinstein Cardiovascular Development Conference, St. Petersburg, FL
2006 Invited Lecture, University of South Carolina School of Medicine, Columbia, SC
2006 Invited Lecture, Department of Molecular and Cellular Pharmacology, University of Miami, Miami, FL
2006 Winner, Presely Zeiss Postdoctoral Fellow Award, American Association of Anatomists Meeting at EB, San Francisco, CA
2006 Platform Presentation American Association of Anatomists Meeting at EB, San Francisco, CA
2006 Travel Award for Scientific Excellence, American Association of Anatomists Meeting at EB, San Francisco, CA
2005 Platform Presentation and Travel Award, Weinstein Cardiovascular Development Conference, Tucson, AZ
2004 American Heart Association Post Doctoral Fellowship Research Award, Ohio Valley Affiliate

Teaching:

The University of Miami, Miller School of Medicine

2011 Lecturer "Vascular Smooth Muscle Tone"
1, 1 hour class for 1st year medical students

2011 Lecturer "Vascular Endothelial Cells"
1, 1 hour class for 1st year medical students

2010-2011 Lecturer "Eukaryotic Model Systems of Human Disease"
2, 1hour classes including journal discussion

2009-2011 Small Group Teaching "Developmental Biology"
3, 1hour paper discussion for 1st year post graduate students

2009-2011 Lecturer "Connective Tissue Biology"
1, 2hour lecture for 1st year post graduate students

2009-2011 Small Group Teaching "Cell Signaling"
3, 1hour paper discussion for 1st year post graduate students

2008-2011 Lecturer "Embryonic Heart Development"
1, 2hour lecture for 1st year post graduate students
2, 1hour paper discussion for 1st year post graduate students

2008-2009 Lecturer "Technical Aspects of Transgenesis"
1, 2hour lecture for 1st year post graduate students

2007-2011 Lecturer "Cardiovascular Development"
1, 2 hour lecture for 1st year post graduate students

2007-2008 Joint Course Leader "Journal Club"
5, 90minute classes for 1st year post graduate students

2006-2011 Small Group Discussion Leader "Pharmacokinetics"
1hour class for second year medical students

2006-2011 Joint Leader "Cardiovascular Journal Club"
Monthly 1hour class for PhD students and Post Doctoral Fellows on the NIH Training Grant

2006-2011 Course Leader "Molecular Techniques in Cardiovascular Research"
9, 1 hour lab techniques classes for PhD students and Post Doctoral Fellows on the NIH Training Grant

University of Durham, UK

1995-1998 Teaching assistant in Biomedical Sciences
150 hours/yr teaching laboratory classes (Undergraduate)

Mentoring Roles:

Graduate Students

The Ohio State University:

2012-TPD Lindsey Miller

The University of Miami, Miller School of Medicine:

2011-TPD Danielle Huk (Funded by AHA Predoctoral Fellowship)
2010-TPD Margaret Benny Klimek
2010-TPD Damien Barnette
2008-2012 Ge Tao (Funded by AHA Predoctoral Fellowship). *Current Postdoctoral Associate, Baylor College of Medicine*
2006-2011 Jacqueline Peacock (Funded by AHA Predoctoral Fellowship). *Current PostdoctoralAssociate, Grand Rapids University*.

Postdoctoral Fellows

The University of Miami, Miller School of Medicine:

2009-2010 *Brian Ramos. Current faculty, Nova Southeastern University, Miami, Florida*
2008-2009 Marianna Porto
2008-2010 Derek Rosenzweig (Funded by NIH F32 Postdoctoral Fellowship). *Current Postdoctoral Fellow, McGill University, Montreal*

Rotation Graduate Students

The Ohio State University:

January 2013 Elizabeth Clark, DVM (Anatomic Pathology Resident/PhD Program)
Sept-Dec 2012 Matthew Vandekopple (MCDB)
Jan-Mar 2012 Lindsey Miller (MCDB)

The University of Miami, Miller School of Medicine:

Nov-Jan 2011 Yenong Cao
July-Aug 2010 Darrell Hardin
Oct-Jan 2010 Kristian Richards
Sept-Dec 2008 Reema Ishteiwy
Mar-June 2007 Lakshmi Ganesan
Mar-June 2006 Yousuf Ali

Graduate Student Committees

The Ohio State University:

2012-TPD PhD Committee member: Jeremy Baeten (BSGP)
2013-TPD PhD Committee member: Stephanie LaHaye (Mol Gen)

The University of Miami, Miller School of Medicine:

2010-TPD Ph.D Committee Chairperson: Xi Chen
2010-TPD MD/PhD Committee Chairperson: Michael Kritzer-Cheren
2010-2012 MD/PhD Committee Chairperson: Ansel Amaral
2009-2011 PhD Committee member: Brittany Ashlock
2009-2011 Ph.D Committee member: Ying Wang
2008-2012 PhD thesis committee member: Sumit Jain
2007-2010 Chairperson, PhD Thesis committee member: Yassin Flores
2006 PhD Thesis committee member: Fatima deFraitas

Qualifying Exam Committees

The University of Miami, Miller School of Medicine:

2010 Chairperson and Qualifier Exam Committee: Reema Ishteiwy
2010 Chairperson and Qualifier Exam Committee: Erin Song
2010 Chairperson and Qualifier Exam Committee: Wenrui Huang
2010 Chairperson and Qualifier Exam Committee: Ben Gerovac
2009 Chairperson and Qualifier Exam Committee: Ye Jey Lin
2008 Chairperson and Qualifier Exam Committee: Salil Sharma

Service:

2012-TPD Graduate Faculty, Biomedical Sciences Graduate Program, The Ohio State University
2011-TPD Graduate Faculty, Molecular, Cellular and Developmental Biology, The Ohio State University
2010-2011 Director, University of Miami Postdoctoral Programs Office
2010 Chair of Faculty Search Committee member, Molecular and Cellular Pharmacology
2008-2011 Member, University of Miami Medical School Faculty Council Animal Resources Committee
2008-2010 Member, Program in Biomedical Sciences (PIBS) Admission Steering Committee
2008-2011 Member, University of Miami Transgenic Animal Facility Committee
2007-2010 University of Miami Cardiovascular Research Symposium Committee Leader and Organizer
2007-2011 Graduate Faculty, Molecular Cell and Developmental Biology, University of Miami
2006 Faculty Search Committee member, Molecular and Cellular Pharmacology
2006-2011 Member, University of Miami Post Doctoral Steering Committee
2006-2011 Graduate Faculty, Molecular and Cellular Pharmacology, University of Miami

Peer Review:

2013 W.W. Smith Heart Research Advisory Board
2011-TPD American Heart Association, National Region, Cardiovascular Development III
2011 Ad-hoc NIH/NHLBI Cardiac Differentiation and Development (CDD)
2008-2010 American Heart Association National Region IV, Basic Cell and Molecular Biology