

RESUME - Ann Catherine Foley PhD

PERSONAL DATA

Assistant Professor,
Department of Bioengineering
Clemson University
Charleston Campus
165 Ashley Avenue, BE 308
Charleston, SC 29425
843-746-2393

EDUCATION

Sample: PhD, Columbia University 2000, Genetics and Development
MPhil, Columbia University 1996, Genetics and Development
MS, Columbia University 1994, Genetics and Development
BA, University of Chicago, 1986, Biology

PROFESSIONAL EXPERIENCE

Clemson University, 2013- , Assistant Professor of Bioengineering
Medical University of South Carolina, 2013- , Adjunct Assistant
Professor of Cell Biology and Regenerative Medicine, 2012-2013,
Assistant Professor of Pediatric Cardiology
Greenberg Division of Cardiology Weill Medical College of Cornell
University, 2007-2012, Assistant Professor
Sanford/Burnham Medical Research Institute, 2002-2007, Post doctoral
research fellow,
Harvard Medical School, 2000-2002 Post doctoral Research Fellow
Packer Collegiate Institute, 1991-1993, Biology and Physics Teacher
Saint Ann's School, 1986-1991, Biology and Chemistry Teacher
Siegel Institute for Communicative Disorders, 1985-1986, Research
Technician

MEMBERSHIPS

Member, The American Heart Association, AHA (2008-).
Member, Society for Developmental Biology, SDB (2005-).

PROFESSIONAL ACTIVITIES

American Heart Association, Study Section Member, CVD2 group,
(2009-) (inactive in 2012).

Ad hoc reviewer for the following journals:
Mechanisms of Development, Stem Cells, Gene Expression Patterns,
Journal of Experimental Medicine, PLoS ONE, Biology Open,
Developmental Biology

PUBLICATIONS

Books and Monographs

Prior to Clemson

- Mercola, M, Guzzo, RM, **Foley, AC** 2010. Cardiac Development in the Frog. In: Heart Development Volume 1 (Rosenthal, N. and Harvey, R. eds.) Academic Press, p. 87-102.
- Guzzo, RG, **Foley, AC**, Ibarra, Y, Mercola M 2008. Signaling Pathways in Embryonic Heart Induction. In: Cardiovascular Development Advances in Developmental Biology Series, (Bodmer, R., ed.), Elsevier, (Volume18), p.117-152.

Refereed Journal Publications (To be submitted articles are not to be included.)

Prior to Clemson

- Liu, W, Brown, K, Legros, S, **Foley, AC**. 2012. Nodal mutant eXtraembryonic ENdoderm (XEN) stem cells upregulate markers for the anterior visceral endoderm and impact the timing of cardiac differentiation in mouse embryoid bodies. *Biology Open* (000) 1-12. doi:10.1242/bio.2012038. PMCID: PMC3507291
- Brown KE, Doss MX, Legros S, Artus J, Hadjantonakis AK, **Foley AC**. 2010. Extraembryonic Endoderm Stem Cells (XEN cells) secrete factors that activate heart formation. *PloS ONE*. 5(10): e13446. PMCID: PMC2958120.
- Brown, KE, Artus, J, Legros, S, Khanin, R, Hadjantonakis, A-K, **Foley, AC**. 2010. A genome wide comparative analysis of Extraembryonic Endoderm Cell lines. *PLoS ONE* 5(8): e12016. PMCID: PMC2919048
- Foley, AC**, Korol, O, Timmer, AM and Mercola M. 2007 Nodal and Cerberus cooperate in heart induction. *Developmental Biology* 303(1): 57-65. PMCID: PMC1855199.
- Foley, AC**, Gupta, RW, Guzzo, RM, Korol, O and Mercola, M. 2006. "Embryonic Heart Induction." *Annals of the New York Academy of Sciences* 1080: 85-96. PMID: 17132777.
- Foley, AC** and Mercola, M. 2005. "Heart Induction by Wnt Antagonists depends on the homeodomain transcription factor Hex." *Genes and Development* 19, 387-396. PMCID: PMC546516.
- Foley AC**, Skromne I, Stern, CD. 2000. Reconciling different models of forebrain induction and patterning: a dual role for the hypoblast. *Development* 127(14

Foley AC, Storey KG, Stern CD. 1997. The prechordal region lacks neural-inducing ability, but can confer anterior character to more posterior neuroepithelium. *Development* 124(4): 2983-2996. PMID: 9247340.

Other Scholarly Publications

Prior to Clemson

- Sheng G, **Foley AC**. 2012. Diversification and conservation of the extraembryonic tissues in mediating nutrient uptake during amniote development. *Annals of the New York Academy of Science*. 1271(1): 97–103. PMCID: PMC3499656
- Liu W, **Foley AC**. 2010. Signaling pathways in cardiomyocyte specification. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine* DOI: 10.1002/wsbm.112 PMID 20830688. PMCID pending.
- Foley, AC** 2009. Cardiac Lineage Selection: Integrating biological complexity into computational models. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine* 1, p. 334-347. PMID: 20836001. PMCID pending.
- Foley AC** and Mercola M. 2004. Heart induction: Embryology to cardiomyocyte regeneration. *Trends in Cardiovascular Medicine*. 14(3):121-5. PMID: 15121161.
- Foley, AC**, Stern, CD 2001. Evolution of vertebrate forebrain development: How many different mechanisms? *Journal of Anatomy* 199(1/2), 35-52. PMCID: PMC1594957
- Stern, CD, **Foley, AC** 1998. Molecular Dissection of Hox Gene Induction and Maintenance in the Hindbrain. *Cell* 94: 143-145. PMID: 9695941

PRESENTATIONS

- Legros, S, et al. **Foley, AC**, "Sinoatrial node-specific differentiation of cardiomyocytes by TGF β -Activated Kinase 1 (Tak1/Map3k7)", NYSTEM, 2012 Windows of Opportunity Meeting, platform presentation, May 24, 2012
- Legros, S, et al. **Foley AC**, "The role of TAK1 in Sinoatrial Node Differentiation", Virginia Tech Carilion Medical Center. Invited Speaker, May 16, 2012
- Legros, S, et al. **Foley AC**, "The role of TAK1 in Sinoatrial Node Differentiation", Mount Sinai School of Medicine, invited speaker, May 3, 2012.
- Legros, S, et al. **Foley AC**, "The role of TAK1 in Sinoatrial Node Differentiation", Washington University of Saint Louis, invited speaker, April 26, 2012.
- Foley AC** "In vitro differentiation of Sinoatrial Node Cells" invited speaker, Tri-institutional Stem Cell Initiative meeting with Roche Pharmaceuticals, March 15, 2012.
- Foley AC** "Embryology of Heart Development", invited lecturer, Cold Spring Harbor Labs, Mouse Development Course, June 24, 2011.
- Liu, W., Brown, K. **Foley, A.C.**, "XEN cells: a molecular genetic tool to dissect visceral endoderm formation and function", EMBO Workshop on Lineage Commitments: Emphasis on Extraembryonic-Embryonic Interfaces, Leuven, Belgium, platform presentation May 27, 2011
- Legros, S, et al. **Foley AC**, "The role of TAK1 in Sinoatrial Node Differentiation", Johns Hopkins School of Medicine, invited speaker, May 16, 2011.

- Legros, S, et al. **Foley AC**, "The role of TAK1 in Sinoatrial Node Differentiation", Medical University of South Carolina, invited speaker, March 21, 2011.
- Legros, S, et al. **Foley AC**, "Overexpression of TGFbeta Activated Kinase Directs Myocardial Cells to a Sinoatrial Node Fate", Keystone Symposium, Keystone CO, poster presentation February 23, 2011.
- Foley AC**, Brown KB and Doss MX. "Signals from the extra-embryonic endoderm act at several distinct steps to specify the myocardium" Weinstein Cardiovascular Development Conference, San Francisco, CA, poster presentation, May 7-9, 2009.
- Legros, S, et al. **Foley AC**, "The role of TAK1 in sinoatrial Node Differentiation", Tri-Institutional Stem cell Consortium, research in progress seminar series, invited speaker, May 12, 2009.
- Foley, AC**, Lakaduc, AC and Mercola, M. "Dkk-1 and Nodal function in parallel to induce both heart and endodermal organs such as the liver and pancreas." First Pan American Congress in Developmental Biology, Society for Developmental Biology joint meeting, Cancun Mexico, poster presentation, June 16-20, 2007.
- Foley, AC** and Mercola, M. "Nodal and Cerberus cooperate in heart induction", Weinstein Conference on Cardiovascular Development, Trade Winds Resort St. Petersburg, Fl, platform presentation, May 12 2006.
- Foley, AC** and Mercola M. "Hex mediated Heart Induction by Wnt Antagonists", Weinstein Cardiovascular Development Conference, University of Arizona, poster presentation, May 19-21, 2005.
- Foley, AC** and Mercola M. "Hex mediated Heart Induction by Wnt Antagonists", 10th International Xenopus meeting Marine Biology Laboratories Woods Hole, MA, poster presentation, Sept. 15, 2004.
- Foley A**, and Mercola M, "Dkk1 induces heart by stimulating a diffusible intermediary factor" The Society for Developmental Biology Annual Meeting. Boston MA, poster presentation, July 30-August 3, 2003

HONORS AND AWARDS

Novartis Best Poster Presentation, Weinstein Cardiovascular Development Conference, The University of Arizona, Tucson, AZ. (2005)

Chosen participant, The Rockefeller University Science Outreach Program, The Rockefeller University (Summers 1992, 1993)

Joseph Klingenstein Summer Fellowship, Columbia Teachers College (1990)

SPONSORED RESEARCH

Completed Research Support:

Prior to Clemson

1. "Dissecting the Pathways of Cardiac Induction." American Heart Association National Affiliate Scientist Development Grant AHA- 0930056N - Foley (PI), \$280,000 (\$280,000 allocated to Foley) (1/09-12/12)
2. "Stem Cells in Cardiovascular Disease" Institutional support from Raymond and Beverly Sackler – Foley (Co-I), \$750,00 (\$160,000 allocated to Foley) (7/10-6/13)
3. "A molecular Dissection of early heart formation in *Xenopus laevis*" California Institute for Regenerative Medicine postdoctoral Fellowship - Foley (PI), \$54,992 (\$54,992 allocated to Foley) (June 2006-June 2007)
4. "Differentiation of a stem cell population in vivo" The National Institutes of Health Ruth L. Kirschstein National Research Service Post-doctoral Award - Foley (PI) \$130,933 (\$130,933 allocated to Foley) (2002-2005)
5. "Cardiomyocyte differentiation of a multipotent stem cell population in vivo" The American Heart Association Post-doctoral Research Fellowship - Foley (PI), \$30,000 (\$30,000 allocated to Foley)(2001-2002)

OTHER SPONSORED ACTIVITY

TEACHING

Courses Taught (Beginning Fall 1990)

Prior to Clemson

Focus group on cardiovascular development, Cornell/Rockefeller/Sloan Kettering Joint Graduate School Program, Fall Semester 2008

MGC Problem Based Learning part B facilitator and triple jump exam, Fall semester 2008 -2011

UNIVERSITY AND PUBLIC SERVICE

Committees

Prior to Clemson:

Advancement to Candidacy Exam (ACE) committee member Cornell, Rockefeller, Sloan Kettering joint graduate school program (2009-2011)

Other Service

Prior to Clemson

First-year Student Advisor, BCMB Cornell, Rockefeller, Sloan Kettering joint graduate school program (2009-2012)

Thesis committees Cornell, Rockefeller, Sloan Kettering joint graduate school program:

Mike Bressan (member) Thesis Advisors: Takashi Mikawa, PhD and Doris Herzlinger, PhD

Katherine Bee (member) Thesis Advisor: Craig Basson, MD

Gabriel Rosenfeld (member) Thesis Advisor Todd Evans, PhD

Gloria Kwon (chair) Thesis Advisor: Anna-Katerina Hadjantonakis, PhD

Mary Benac (chair) Thesis Advisor: Elizabeth Lacy, PhD

Interviewing for Weill Cornell Medical College, MD PhD program

Interviewing BCMB, Joint program for Cornell, Rockefeller and Sloan Kettering

Date of most recent resume update. September 16, 2013.