

# CURRICULUM VITAE

Katherine Marie Baumgarner

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## ***Education:***

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Master of Science	Genetics Concentration, Department of Animal Sciences, Purdue University	<b>August 2011</b>
Bachelor of Science	Biological Sciences, Louisiana State University	<b>May 2002</b>

## ***Specialized Training:***

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CRISPR-Cas9 Genome Editing Course, MB-205, Thermo-Fisher Scientific Training Center, Carlsbad, CA	<b>May 2017</b>
iPS Cells to Neural Progenitors Training Course: Reprogramming, Maintenance and Differentiation, STEMCELL Technologies, Vancouver, Canada	<b>April 2016</b>
Human Pluripotent Stem Cell Training, Life LAB, Life Technologies, Frederick, MD	<b>May 2015</b>

## ***Teaching Experience:***

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<b>Adjunct Instructor</b> , University of South Carolina Upstate Biology 242L, Human Physiology Lab	<b>Fall 2014</b>
Biology 302L, Introduction to Cell and Molecular Biology Lab	<b>Spring 2014 &amp; Fall 2014</b>

<b>Adjunct Instructor</b> , University of North Carolina at Wilmington Biology 335 Genetics Lecture	<b>Fall 2012</b>
Biology 201 Cell Biology Lab	<b>Spring 2012 &amp; Fall 2012</b>

<b>Teaching Assistant</b> , Purdue University ANSC 59500 Mouse Genomic Analysis	<b>Fall 2007 &amp; Fall 2008</b>
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## ***Laboratory Experience:***

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<b>Research Specialist</b> Via College of Osteopathic Medicine, Carolinas Campus, Spartanburg, SC	<b>2014-Present</b>
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As Lab manager for VCOM's stem cell biology lab at Gibb's Research Laboratory, I am responsible for the daily operations of the lab. This includes: ordering supplies for 4 principle investigators, maintaining equipment and sample inventories, training medical and undergraduate students, updating protocols, coordinating safety meetings, and insuring the lab is compliant with hospital regulations. Additionally, I have been participating in research projects with the researchers at Gibb's which includes gene editing technology, stem cell culture, reprogramming and differentiating cell lines, and confocal microscopy.

<b>Research Technician III</b> Psychology Department, University of North Carolina at Wilmington, Wilmington, NC	<b>2012-2013</b>
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Lab manager for Dr. Rachel Kohman. Maintained mouse colony & performed behavioral tests on mice. Performed qPCR, ELISA, & immunohistochemistry on spleen and brain tissues from these mice.

<b>Research Analyst &amp; Lab Manager</b> College of Health Sciences, University of Kentucky, Lexington, KY	<b>2010-2011</b>
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Ordered laboratory supplies, maintained laboratory equipment, updated Biological Safety Protocol, isolated muscle stem cells (myosatellite cells) from human muscle biopsies, maintained records for human primary skeletal muscle cell line collection. Prepared human muscle biopsies for FACs analysis. Cultured & characterized human primary cell lines. Immuno-magnetic bead sorted myoblasts, isolated protein & RNA, performed western blot analysis, qRT-PCR & immunocytochemistry. Trained new post-doctoral scholars in lab-specific techniques.

**Graduate Research Assistant****2007-2010**

Department of Animal Sciences, Purdue University, West Lafayette, IN

My project focused on the genetic pathways disrupted by an embryonic lethal, homozygous mutation on murine chromosome 11. Identified the mutation responsible for lethality through mapping and sequencing of candidate genes. Demonstrated that *Notchless*, a regulator of Notch signaling, affects genes in the Wnt pathway during pre-implantation development using a pathway focused PRC array.

Trained new graduate students, supervised undergraduate students, and monitored hazardous material collection & disposal in the lab. Collected and isolated RNA from pre-implantation embryos for genotyping and qRT-PCR. Other laboratory techniques included PCR, sequence analysis, cDNA synthesis, primer design, mRNA in situ hybridization, and molecular cloning. Responsible for mouse colony husbandry such as breeding, weaning, IP injection of hormones, sedation, euthanasia, non-survival surgery, and database record-keeping.

**Laboratory Technician****2006-2007**

Department of Animal Sciences, Purdue University, West Lafayette, IN

Maintained several lines of research mice, including an embryonic lethal strain. This included weaning, tail DNA extractions, sedation, collection of embryos for DNA and RNA isolation, and the euthanasia of mice. Assisted in the set up a molecular biology lab. Performed PCR, designed primers, isolated DNA and RNA from pre-implantation mouse embryos, and sequenced genomic DNA. Analyzed DNA sequences for mutations and single nucleotide polymorphisms.

**Biological Research Technician****2006**

USDA-ARS, Harbor Branch Oceanographic Institution, Fort Pierce, FL

Cultured juvenile Florida pompano, *Trachinotus carolinus*, to conduct research on wastewater treatment and solids removal of low head filter technology in a recirculation aquaculture system (RAS). Determined standard oxygen transfer rates, optimal flow conditions, and water quality for a commercial scale system. Aided in construction of the RAS system and the setup of a water quality laboratory.

**Research Associate & Laboratory Manager****2002-2005**

Aquaculture Research Station, Louisiana State University, Baton Rouge, LA

Analyzed the reproduction of experimental crawfish, *Procambarus clarkii*; identified and cultured phytoplankton; performed water quality analysis of crawfish pond effluent; insured Quality Assurance/ Quality Control was maintained and proper documentation occurred; maintained laboratory equipment, ordered supplies, supervised student workers, developed standard operating procedures (SOP's), trained student workers, graduate students, and other research associates to perform water quality analyses; maintained data sets for crawfish reproduction studies, an EPA crawfish effluent project, and other water quality related projects; statistical analyses of crawfish reproduction data.

**Laboratory Technician****2001-2002**

Department of Environmental and Civil Engineering, Louisiana State University, Baton Rouge, LA

Performed multiple analyses of water samples: tested for phosphorous, nitrate, nitrite, total & total volatile solids in water.

**Laboratory Technician****Summer 2000**

Department of Pathology, Tulane University Medical School, New Orleans, LA

Performed transformation and amplification of plasmid DNA for use as probes in Southern blot analysis; purified, restriction digested, and performed electrophoresis of the pDNA; assisted in experiments and surgery involving mouse subjects; collagen stained slides of sectioned lung tissue from experimental mice; identified and counted leukocytes recovered via broncho-alveolar lavages of these mice.

**Laboratory Assistant****Summer 1998**

Department of Pathology, Tulane University Medical School, New Orleans, LA

**Professional Societies:**

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Member, World Aquaculture Society, 2003-2005  
Member, U.S. Chapter of the World Aquaculture Society, 2003-2005  
Student Member, American Society of Human Genetics, 2007-2010

**Awards:**

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Louja Graduate Travel Award, Department of Animal Sciences, Purdue University, 2008  
Travel Award, Summer Institute in Statistical Genetics, University of Washington, 2008

**Leadership:**

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Member, Graduate Student Association, Department of Animal Science, 2007-2010  
Seminar Committee Representative, Department of Animal Science, 2007-2008  
Graduate Mentor, Summer Undergraduate Research Fellowship (SURF), 2007 & 2008  
Judge, Purdue Undergraduate Research and Poster Symposium, 2008  
Senator, Purdue Graduate Student Government, 2008-2009  
Social Committee Member, Purdue Graduate Student Government, 2008-2009

**Publications:**

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J.P. Braude, S. Vijayakumar, K. Baumgarner, R. Laurine, T.A. Jones, S.M. Jones, S.J. Pyott. Deletion of Shank1 has minimal effects on the molecular composition and function of glutamatergic afferent postsynapses in the mouse inner ear. Hearing Research. 2015; 321: 52-64.

K.M. Baumgarner, S. Setti, C. Diaz, A. Littlefield, A. Jones, RA Kohman. Diet-induced obesity attenuates cytokine production following an immune challenge. Behavioural Brain Research. 2014 July 1; 267:33-41.

A.C. Lossie, C.L. Lo, K.M. Baumgarner, M.J. Cramer, J.P. Garner, M.J. Justice. ENU mutagenesis reveals that Notchless homolog 1 (*Drosophila*) affects Cdkn1a and several members of the Wnt pathway during murine pre-implantation development, BMC Genetics. 2012, Dec 12;13:106.

C. Lo, F. Shen, K.M. Baumgarner, M.J. Cramer, A.C. Lossie. Identification of 129S6/SvEvTac-Specific Polymorphisms on Mouse Chromosome 11, DNA and Cell Biology. 2012, Mar; 31(3):402-14.

**Meeting Abstracts:**

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C. McKinney and K. Baumgarner, Danon Disease: A lysosomal hypertrophic cardiomyopathy model created by CRISPR editing LAMP2 in iPSC and fibroblasts; (Poster# 2737W). Presented at the 67<sup>th</sup> Annual Meeting of the American Society of Human Genetics, October 18, 2017, Orlando, Florida.

C. McKinney, M. Corrigan-Cummins, K. Baumgarner, Gaucher Type 2 Neural Models from Human Induced Pluripotent Stem Cells; (Poster# 2275T). Presented at the 65<sup>th</sup> Annual Meeting of the American Society of Human Genetics, October 8, 2015.

K.M. Baumgarner, C. Diaz, A. Jones, R.A. Kohman. Role of inflammation in high-fat diet-induced cognitive deficits and alterations in hippocampal neurogenesis; (Program No. 277.05. 2013 Neuroscience Meeting Planner). San Diego, CA: Society for Neuroscience, 2013.

K.M. Baumgarner, M.J. Justice, and A.C. Lossie. Mutations in *Notchless* disrupt expression of genes in the *Notch* and *Wnt* pathways, Keystone Symposia on Integration of Developmental Signaling Pathways, Victoria, British Columbia, 2010, poster.

K.M. Baumgarner, M.J. Cramer, M.J. Justice, and A.C. Lossie. Searching for an embryonic lethal mutation associated with DNA methylation, The American Society of Human Genetics 57<sup>th</sup> Annual Meeting, October 26, 2007, poster.

G.S. Warshamana, D.A. Pociask, J.Y. Liu, K.M. Hanson, K. Fisher, P. Slime, and A.R. Brody. Titering non-replicating adenovirus as a vector for transducing active TGF $\beta$ 1 Gene expression in the lungs of C57BL/6 mice; (163: A945). American Journal of Respiratory and Critical Care Medicine, 2001.