

Ryan Miller

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EDUCATION:

Clemson University, Greenville, SC
PhD Student in Healthcare Genetics

Johns Hopkins University, Baltimore, MD
Masters of Science in Biotechnology/Bioinformatics, 2014

University of New England, Biddeford, ME
Bachelor of Science in Medical Biology, 2009

CLINICAL POSITIONS:

Piedmont Reproductive Endocrinology Group
Senior Embryologist 2016 - Current

Greenville Health System, Greenville, SC
Senior Embryologist 2014 - 2016

Fertility Centers of New England, Reading, MA
Per Diem Embryologist Jun 2015 - 2016

Technical Skills

IVF Lab

- Human embryo culture
- Intracytoplasmic sperm injection
- Embryo biopsy
- Vitrification and cryopreservation of embryos
- Embryo thawing
- Assisted hatching
- Lab QC/QA and maintenance

Andrology Lab

- Semen analysis
- IUI prep
- Semen cryopreservation

RESEARCH POSITIONS:

University of South Carolina School of Medicine, Greenville, SC
Research Associate 2013 - 2014

Our lab investigated a subset of pulmonary stretch receptors and their role in dyspnea at Greenville Hospital Systems Institution for Translational Oncology Research.

Research Lab Management

- New equipment ordering and equipment setup
- Data analysis and presentation

Immunohistochemistry

- Performance of immunofluorochemistry with clinical pathology samples
- CLARITY tissue clearing for immunostaining of neurons in millimeter thick tissue sections of lung and spinal cord

University of New England College of Osteopathic Medicine, Biddeford, ME

Research Associate 2009-2013

Our lab investigated the effect of collagen triple helix repeat containing-1 on skeletal muscle satellite cells using a model of skeletal muscle atrophy and transgenic mice.

Research Lab Management

- Management of medical students, graduate students and undergraduates
- Equipment setup and maintenance
- Training lab personnel on proper use of equipment
- Ordering supplies, reagents and equipment
- Data analysis and presentation
- Creating research proposals for approval by IACUCs and IRBs

Tissue Culture

- Culture of immortalized cell lines and isolated primary cell cultures
- Preparation of cells for cryopreservation
- Immunocytochemistry, cell transfection and transduction with bacterial plasmids and viral vectors
- Culture of non-adherent monoclonal hybridomas and affinity chromatography antibody purification
- Harvesting cells for and performance of immunoblotting

Flow Cytometry

- Performance of multicolor flow cytometry

Histology/Immunohistochemistry

- Preparation of fresh tissue for and performance of cryosectioning
- Tissue processing and sectioning of paraffin embedded tissue
- Chemical staining, immunohistochemistry and immunofluorochemistry

Microscopy

- Use of microscopes for brightfield, fluorescent, DIC and confocal imaging

Genetics

- mRNA isolation from cultured cells and harvested tissue
- cDNA creation for use in qRT-PCR and emulsion PCR
- Animal colony genotyping
- Agarose gel electrophoresis

Microbiology

- Bacterial culture
- Molecular cloning
- Isolation and purification of plasmid DNA

TEACHING EXPERIENCE:

University of New England College of Arts & Sciences, Biddeford, ME

Organic Chemistry Laboratory Teachers Assistant 2009-2010

- Assisted students with in lab micro-scale procedures
- Designed and tested new micro-scale labs with emphasis on "green" chemistry; using environmentally safe chemicals and procedures that produce low amounts of waste or environmentally safe waste
- Helped students with laboratory reports, problem sets and data interpretation

Jameson Elementary School, Old Orchard Beach, ME

Afterschool Science Club Teacher 2009

- Designed small science projects for elementary students (1st to 3rd grade) to complete after school
- Projects included baking soda volcanoes as well as experiments with flotation and magnetism

ABSTRACTS & PRESENTATIONS:

10/14 - American Society for Matrix Biology - Poster Presentation by Andrew Binks: "Cthrc1 Reduces Collagen Formation Associated with Pulmonary Fibrosis and Limits the Decline in Lung Function", Andrew Binks, Megyn Beyer, Ryan Miller, Renee LeClair

4/12 – Experimental Biology – **Poster Presentation by Ryan Miller:** "Cthrc1 Correlates with Activation of Adult Stem Cells in Skeletal Muscle", Ryan J. Miller, Volkhard Lindner, Renee LeClair

10/11 - Biomedical Sciences Seminar Series - Presentation by Renee LeClair: "Cthrc1 Activates Skeletal Muscle Satellite Cells and Enhances Muscle Fiber Size", Ryan Miller, Mark Scheunke, Renee LeClair

10/11 - Biomedical Sciences Seminar Series - **Presentation by Ryan Miller:** "The Role of Cthrc1 in Skeletal Muscle", Ryan Miller, Volkhard Lindner, Renee LeClair

10/11 - UNECOM Research Week - **Poster Presentation by Ryan Miller:** "Cthrc1 is Involved in the Activation of Skeletal Muscle Stem Cells", Ryan Miller, Mark Scheunke, Renee LeClair

10/11 - UNECOM Research Week - Poster Presentation by Megyn Beyer: "Non-ventilatory Breathing Maneuvers Generate Error in Estimates of Breathing Parameters Using Whole Body Plethysmography" Megyn Beyer, Ryan Miller, Renee LeClair and Andrew Binks

5/11 - American College of Sports Medicine – Abstract: "Collagen Triple Helix Repeat Containing-1 (CTHRC1) Attenuates Skeletal Muscle Atrophy", Mark D. Schuenke, Jeremy Wright, Ryan J. Miller, Renée J. LeClair

5/11 - American College of Sports Medicine - Abstract: "Collagen Triple Helix Repeat Containing-1 Induced Upregulation of Myogenin and Decorin Expression", Ryan J. Miller and Jeremy Wright, Mark D. Schuenke, Renée J. LeClair

11/10 - UNECOM Research Week - **Poster Presentation by Ryan Miller:** "Cthrc1 Modulates Skeletal Phenotype via Inhibition of TGF- β Signaling", Ryan Miller, Jeremy Wright, Mark Scheunke, Renee LeClair

11/10 - American Society for Matrix Biology - **Poster Presentation by Ryan Miller:** "Collagen Triple Helix Repeat Containing-1's Interaction with Canonical and Noncanonical Wnt Signaling Reduces Collagen Deposition", Ryan J. Miller, Jeremy Wright, Megyn Beyer, Mark D. Schuenke, Renée J. LeClair

10/10 - Undergraduate Summer Research Symposium - Poster Presentation by Megyn Beyer: "The Role of Cthrc1 Expression in a Bleomycin Model of Pulmonary Fibrosis", Megyn Beyer, Ryan Miller, Alex Skorput, Edward Bilsky, Andrew Binks and Renee LeClair