

# Department of Pediatrics, University of Colorado, AMC

September 10, 2020  
2:00pm-4:00pm

The St. Geme Symposium will be held this year in association with the St. Geme Lectureship, an annual event in honor of Dr. Joseph St. Geme, a former Dean of the School of Medicine. The purpose of the Symposium is to introduce research performed in the Section of Developmental Biology to our St. Geme Lecturer, Dr. Nancy Bonini, members of the St. Geme family and the Anschutz Medical Campus community.

Zoom link

<https://ucdenver.zoom.us/j/92140407653>

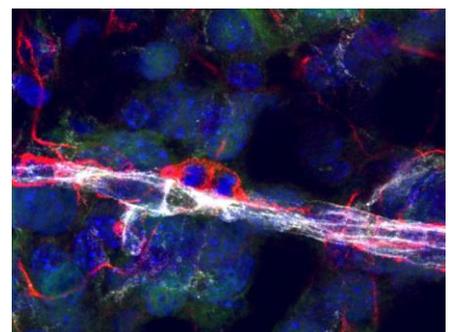
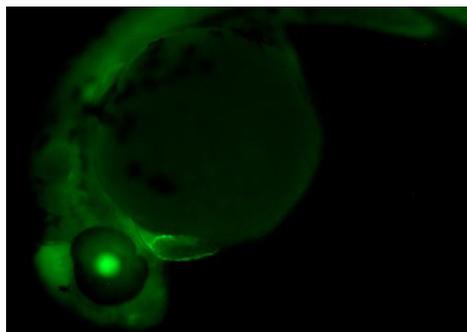
# St. Geme Symposium

## Sponsored by the Section of Developmental Biology

### Speaking Schedule

#### Introduction by Dr. Bruce Appel, Section Head, Developmental Biology

- 2:00 **Caleb Doll**, PhD – Fragility in specification; roles for the RNA binding protein FMRP in gliogenesis
- 2:15 **Agnese Kocere** – RBM8A deficiency in TAR syndrome impacts the lateral plate mesoderm
- 2:30 **Julia Derk**, PhD – A critical role for Wnt suppression in the development of the arachnoid barrier of the meninges
- 2:45 **Kelly Sullivan**, PhD – Normalization of Interferon Receptor Gene Dosage in Mouse Model of Down Syndrome
- 3:00 **Yunus Ozekin** – Exploring the Effects of Prenatal ECigarette Exposure on Craniofacial Development
- 3:15 **Jessica Warns**, PhD – Does NF-Y regulate cilia gene networks?
- 3:30 **Kayt Scott** – Prdm8 regulates pMN progenitor specification for motor neuron and oligodendrocyte fates by modulating Shh signaling response
- 3:45 **Peter Dempsey**, PhD - Cellular Plasticity of Intestinal Secretory Progenitors in Response to Injury



## About the Section of Developmental Biology:

The Section of Developmental Biology is committed to research that improves child health. We perform research using stem cell, organoid and animal experimental models. Our investigations focus on several major tissue and organ systems such as the brain, heart, intestine, face and vascular, olfactory and immune systems. Our work is leading to a better understanding of childhood disabilities associated with neuropsychiatric disease, Down syndrome, the congenital basis of cardiovascular and facial malformations and the impact of maternal health on fetal development.

## Developmental Biology faculty, post-doctoral fellows and student's biographical information:

### Dempsey, Peter, PhD - Associate Professor

Dr. Peter Dempsey's program focuses on the role of ADAM metalloproteinases in regulating extracellular signaling events involved in normal tissue homeostasis of the gastrointestinal tract and during injury/inflammation and cancer pathogenesis. He obtained his PhD in tumor cell biology at the Ludwig Institute for Cancer Research/University of Melbourne in Melbourne, Australia. His post-doctoral training at the Sloan Kettering Institute and Vanderbilt University was focused on understanding different aspects of growth factor signaling in the regulation of intestinal epithelial cell growth and differentiation. Upon establishing his own laboratory, a major focus has been on ADAM10 and ADAM17 sheddases and studying the biological significance of downstream signaling events in vivo. His recent work in the intestine has focused on ADAM-mediated signaling events in regulation of stem cell function, injury/repair and in colitis-associated cancer models. In particular, current studies are examining how ADAM10/Notch signaling modulates secretory progenitors such as Paneth cell progenitors to undergo stem cell reversion upon mucosal injury/repair. These studies use genetic mouse models and intestinal organoid stem cell cultures to study signaling pathways that maintain the stem cell niche and control cell fate programming.



### Derk, Julia, PhD – Post-Doctoral Fellow

Julia Derk, PhD is a Colorado native that attended Brandeis University to study Neuroscience and Psychology, where she received high honors for her senior thesis in the Ashton Graybiel Spatial Orientation Laboratory. From there, Julia went on to NYU School of Medicine to study Microglia inflammation during Alzheimer's disease and the impact of Microglia on homeostatic cognition in the laboratory of Dr. Ann Marie Schmidt. Currently, Julia is studying the development and function of the Arachnoid Barrier of the meninges, as well as its breakdown during bacterial meningitis. In addition to her work in the laboratory, Julia is an active member in many advocacy and activist groups as well as serving as Director for Clear Direction Mentoring, an organization dedicated to diversifying STEM through long-term mentorship for underrepresented minority high school students interested in STEM careers.



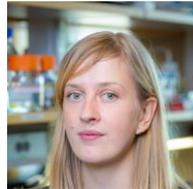
### **Doll, Caleb, PhD – Assistant Research Professor**

Caleb joined the Department of Pediatrics and Section of Developmental Biology at the University of Colorado in the spring of 2017. He completed his graduate training in Neuroscience and a postdoctoral fellowship in the Department of Biological Science at Vanderbilt University in Nashville, Tennessee. His work broadly focuses on how neurons and glia establish and maintain connections during early development of the central nervous system. Much of his professional work has focused on the autism spectrum disorder Fragile X syndrome, which is often characterized by faulty neural circuit development and refinement. His latest hypotheses center around the subcellular regulation of mRNA in distal oligodendrocyte processes and how these regulatory programs promote myelin sheath growth.



### **Kocere, Agnese – PhD Student**

Agnese obtained her Bachelor and Master degrees in Molecular Biology at the University of Oslo, Norway. She worked on her Master thesis at



Griffith's lab and developed a zebrafish xenograft model for real-time imaging of nanoparticles. After completing her thesis, she enrolled in Molecular Life Sciences PhD program at University of Zurich and joined the Mosimann lab to continue working with zebrafish but also dive deeper in the world of imaging and genetics. Approximately half a year into her time as a graduate student, she moved to Colorado together with the lab and is now completing her PhD remotely, while working at University of Colorado, Anschutz Medical Campus. In her spare time she enjoys backpacking and spending time in the woods, as well as dancing swing and climbing, so Colorado is a great place to be!

### **Ozegin, Yunus – PhD Student**

Yunus received his Bachelor's degree in Biomedical Sciences from Colorado State University in 2017. During that time, he primarily worked as an undergraduate research technician in Dr. Michael Lappin's at the CSU Veterinary Teaching Hospital lab studying canine/feline infectious diseases. After graduation, he stayed in Fort Collins in pursuit of a Master's degree in Assisted Reproductive Technologies under the supervision of Dr. Jennifer Barfield. Here, he developed skills in embryology and in vitro fertilization working with a variety of model organisms including sheep, cows, and bison. After receiving his Master's degree, he transitioned from being a reproductive biologist to a developmental biologist, and began his PhD work at the University of Colorado, Anschutz Medical Campus in 2018 in Dr. Emily Bates' lab where he currently uses mouse models to study the effects of vaping during pregnancy on craniofacial development. He is passionate about prenatal health and public policy and hopes his work will create a positive impact on how healthcare providers advise pregnant women on electronic cigarette use. Outside of lab, he enjoys anything and everything outdoors and spends his time indoors painting.



## Contact Us

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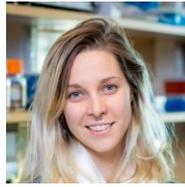
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### Website

<https://medschool.cuanschutz.edu/pediatrics/sections/developmental-biology>

### Scott, Kayt – PhD Student

Kayt received her B.S. in Cellular, Molecular, and Developmental Biology from Colorado Mesa University in 2016. The fall after graduating she enrolled in the CSD program at the University of Colorado, Anschutz Medical Campus and shortly after joined the Appel lab. Her research is aimed at understanding the transcriptional networks that regulate developmental timing and fate decisions of neural progenitor cells in the ventral spinal cord. Outside of the lab, Kayt takes advantage of living in Colorado, often taking weekend fishing and camping trips.



### Sullivan, Kelly, PhD – Assistant Professor

Kelly is a member of the Linda Crnic Institute for Down Syndrome and a Boettcher Investigator. His research focuses on the role on interferon signaling in Down syndrome. Dr. Sullivan received his BS from Colorado State University and his PhD from the University of North Carolina at Chapel Hill, where he studied histone mRNA metabolism with Dr. William Marzluff. He completed postdoctoral training at the University of Colorado at Boulder under the direction of Dr. Joaquin Espinosa focusing on mechanisms of p53-dependent cell fate choice.



### Warns, Jessica, PhD – Post-Doctoral Fellow

Jessica's love for science began in high school and grew during her undergraduate studies in molecular biology at Muskingum University in New Concord, Ohio. After graduating with her B.S. in 2013, Jessica attended the University of North Dakota in Grand Forks, North Dakota for graduate studies in biochemistry and molecular biology. During this time, Jessica worked on a variety of projects. Her main PhD dissertation project was studying the role of a cholesterol metabolite on proliferation and metastasis in colon cancer cells. She graduated with her PhD in 2018 and then decided to accept an one year teaching position at Fort Lewis College in Durango, Colorado where she taught Biochemistry and other courses. In 2019, Jessica joined the lab of Charles Sagerström as a postdoctoral fellow and began working on her project characterizing the role of a transcription factor regulation of ciliogenesis in early zebrafish development. Her career goal after finishing her postdoctoral fellowship is to teach and mentor research projects at a primarily undergraduate institution. Outside of lab, Jessica enjoys volunteering, walking her dog, and being with friends and family.

