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Research Interests: Brainstem development and function, neural fate decisions, developing *in vitro* neural organoid models

Strengths or Unique Resources: Directing differentiation of stem cells into neurons, single-cell RNA sequencing throughout development, brainstem and spinal cord development

Type of collaborator you seek: Material scientists, experts in Notch signaling, small molecule *in vitro* screening

Publication List:

<https://tinyurl.com/2r64xpjh>



Publications

Lab website:

<https://buttslab.blogs.rice.edu/>



Lab Website

LinkedIn:

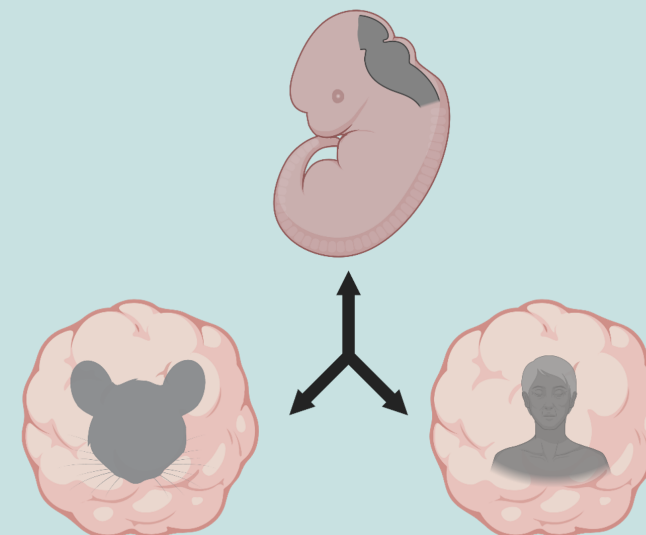
<https://www.linkedin.com/in/jessica-c-butts/>



LinkedIn

Experimental Brainstem Models

Mouse embryo



Mouse
stem cell culture

Human
stem cell culture

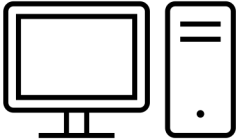
Cross-Platform Investigation of Brainstem Development

Investigation of brainstem development in the mouse embryo

Development of brainstem organoid models



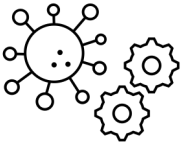
Transcriptomics
Epigenomics



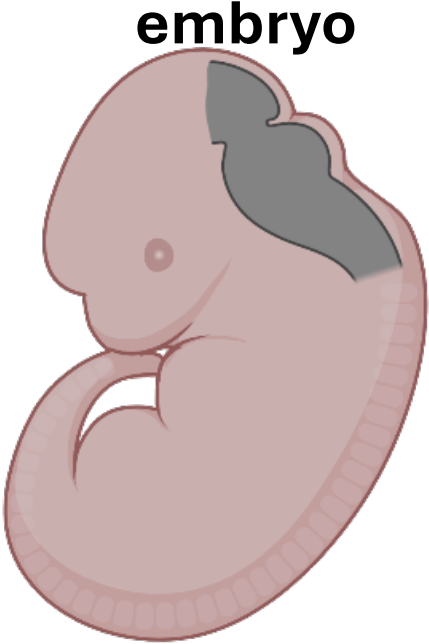
Computational
Analysis



Imaging

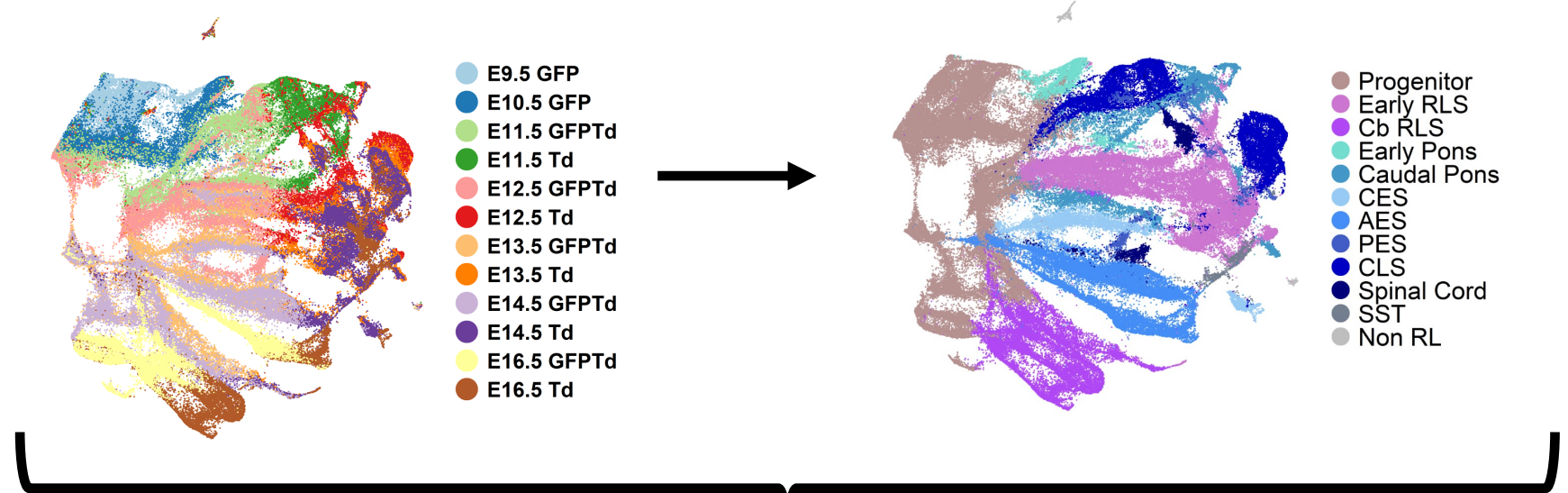
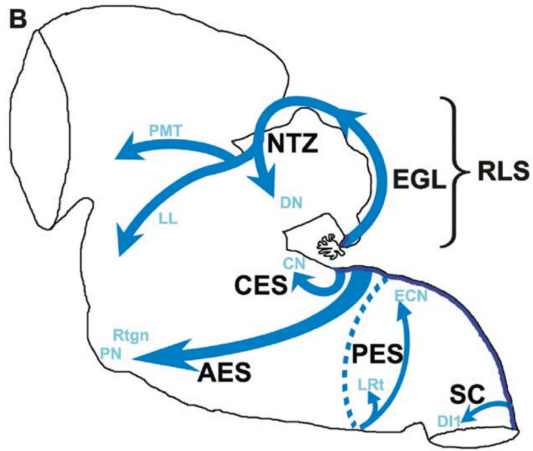


Tissue
Engineering



Developmental
Neuroscience

Atoh1-lineage gives rise to over 40 different nuclei in brainstem and cerebellum



Role of Notch signaling in early fate decisions

Investigating an individual brainstem nuclei marked by a new neural peptide

Develop Atoh1-lineage organoid

Spatial transcriptomics of the brainstem

In vitro CRISPR perturbation of neuronal cell fate