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### AREA(S) OF FOCUS:

#### Unraveling the programming of cellular fate to develop novel therapeutic options

The Merrill lab aims to develop understanding of how key genes drive the diversity of cells in our bodies and to develop tools that can leverage such understanding into the creation of new cell and gene therapies.

### KEY RESEARCH AREAS:

#### Embryonic development

Understanding the mechanisms responsible for specific cellular properties and elaboration of the basic body plan.

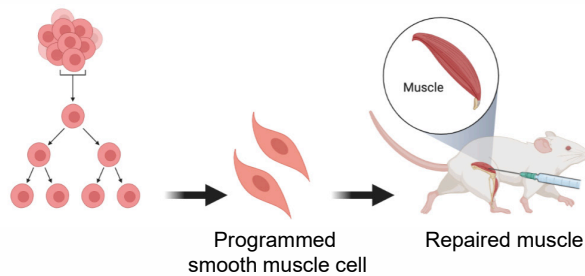
#### Cellular programming

Developing new molecular tools (e.g., CRISPR/Cas9) to provide developmental instructions to cells.

#### Maintenance of a pluripotent state

Identifying the intracellular pathways controlling the entry into and exit from the pluripotent state of stem cells.

Pluripotent cells



### ENTREPRENEURIAL SUCCESS:

## SYNTAX BIO

Syntax Bio is a seed-stage company using synthetic biology to engineer potent cell-based therapies.

Using cutting-edge molecular biology techniques, Syntax Bio can reprogram the development of stem cells to drive them to therapeutically useful cell states for a variety of diseases, including diabetes, muscular dystrophy, and hemoglobinopathies.

Whereas the CRISPR-Cas9 system is best known for its ability to edit of the genome by changing or removing unwanted sections, such as mutated DNA, Syntax Bio's technology harnesses the power of Cas9 by activating desired genes without mutating the genome. Contributions from Dr. Merrill's lab provided the framework for SYNTAX BIO's capacity to program stem cells into potentially therapeutic cell products.



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