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Biology Faculty Member Awarded Grant to Explore Stem Cell Growth

Winthrop University

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Biology Faculty Member Awarded Grant to Explore Stem Cell Growth

Quick Facts

- The \$73,159 grant is for one year but can be renewed for two more years.
- Stern and up to five students will spend time studying how cultured stem cells behave in two- and three-dimensional experimental microenvironments.



A sample of the pork tissue that Stern and students will work with.

ROCK HILL, SOUTH CAROLINA – Winthrop University **Assistant Biology Professor Matt Stern** was recently awarded a **SC INBRE III Developmental Research Project (DRP) Target Faculty award** to work with students to explore stem cell growth.

The \$73,159 grant is for one year but can be renewed for two more years.

Stern and up to five students will spend time studying how cultured stem cells behave in two- and three-dimensional experimental microenvironments. They will use stem cells from fatty tissue and compare how growing the cells as a three-dimensional ball of cells changes key properties of the cells relative to growing the cells on a flat surface such as a Petri dish.

The **ball-like culture method** is not traditionally used for stem cells; however, Stern's team has some evidence that it can cause useful change in the cells such as making them better equipped to generate muscle cells.

Another part of their research uses pig muscle to produce a three-dimensional environment in which to grow their stem cells. Stern's team removes the pig cells from the muscle while leaving behind what Stern refers to as the scaffolding of the tissue. "We're interested in the biochemical properties of that scaffolding," Stern said. "We think that environment will help our stem cells be more efficient at producing muscle cells."

He said both studies are unique to Winthrop's labs. Lessons learned from each can be applied to the other.

Stern's grant is one of nine awarded this fall to investigators at South Carolina teaching institutions as part of the **SC INBRE grant** funded through the **National Institute of General Medical Sciences, National Institutes of Health**. The program has created partnerships between the state's three research institutions and nine undergraduate institutions to accelerate the growth of biomedical research activities in the Palmetto state. Winthrop is on the third cycle of its **INBRE grant**.

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