

Lab probes stem cell potential

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Tulane researchers are developing new nanomaterials to study how adult stem cells grow and might be used to treat central nervous system disorders. Leading this research is Michael Moore, the Paul H. and Donna D. Flower Early Career Professor in Engineering, director of the Neural Micro-Engineering Laboratory, and the most recent winner of the Oliver Fund Scholar Award at Tulane University.



Leading research to develop new nanomaterials to treat central nervous system disorders is Michael Moore, who received the Oliver Fund Scholar Award at Tulane University. (Photo by Paula Burch-Celentano)

The Tulane Office of Research presents the award twice yearly after competition in a specific area of research strength at Tulane. A prize of \$41,000 was awarded to support Moore's work in the area of "Application of Materials Science to Complex Problems in the Life Sciences."

"The Oliver Fund Award was given to support a new research direction in the Neural Micro-Engineering Laboratory," says [Moore](#).

The laboratory's experiments will focus on uses for induced pluripotent stem cells, Moore says. "These are adult stem cells that have been reprogrammed to behave more like embryonic stem cells — able to turn into almost any type of cell within the body."

It is widely believed that these types of stem cells hold tremendous promise in the treatment of neuronal disorders, but little is currently known about how they respond to cues in their surroundings.

"We will develop a set of new nanomaterials that will allow us to fine-tune the microenvironment of stem cells that have been coaxed to become neuronal cells," says Moore. "Our materials will allow us to study physical and molecular factors that might contribute to the ability of these cells to grow into functional nervous tissue."

"It is possible that through this work we may gain a better understanding of how stem cells may be used to treat hitherto untreatable central nervous system disorders such as stroke and spinal cord injury. It may also be applicable to neurodegenerative disorders such as glaucoma, Lou Gehrig's disease and multiple sclerosis."