

May 05, 2010

2010-05-05: Chemical engineering professor wins \$1.9 million NIH award

Jenny Eriksen
Northeastern University

Recommended Citation

Eriksen, Jenny, "2010-05-05: Chemical engineering professor wins \$1.9 million NIH award" (2010). *News@Northeastern*. Paper 582.
<http://hdl.handle.net/2047/d20001825>

This work is available open access, hosted by Northeastern University.

Chemical engineering professor wins \$1.9 million NIH award



Murthy will collaborate with researchers to develop stem cell isolation technologies. Photo by Mary Knox Merrill.

May 5, 2010

Shashi Murthy, assistant professor of **chemical engineering** at Northeastern University, has been awarded a three-year \$1.9 million grant from the National Institutes of Health (NIH) to develop innovative techniques for isolating and cultivating stem cells for use in the replacement of damaged tissue.

An international team of researchers led by Murthy will design and build small devices to extract cell types that help to grow new tissue for cardiac muscle or skin, for example, or repair diseased or non-functional tissue.

Stem cells and cells that resemble stem cells are present in every tissue of the human body. Under certain conditions, these cells have the capacity to repair damaged tissue.

Murthy explains, "Stem cells play a critical role in the development of the human body and all its parts. Our goal is to advance regenerative-medicine technologies by more effectively extracting and cultivating stem cells to multiply and develop into new tissue."

His team will develop a new family of devices, called microfluidic systems, which will enable greater efficiency and accuracy in the separation of stem cells from a small tissue or blood sample.

One focus of this work—to be pursued in collaboration with Rebecca Carrier, another assistant professor of chemical engineering at Northeastern—is the isolation of intestinal stem cells. These cells are extremely challenging to separate, since they tend not to survive after they're extracted from their native environment.

As part of the grant, Murthy will also collaborate with several scientists from research institutions throughout North America. Working with Milica Radisic, an assistant chemical-engineering professor at the University of Toronto, Murthy will explore ways of repairing diseased heart tissue by obtaining cardiac stem cells from normal tissue and implanting these cells into damaged tissue.

In collaboration with John Mayer and Juan Melero-Martin, doctors at Children's Hospital Boston, Murthy will investigate blood-vessel tissue repair by extracting cells capable of repairing the tissue and implanting them into damaged blood vessels.

And Murthy will team up with Martin Yarmush and Yaakov Nahmias, researchers at Massachusetts General Hospital and Shriners Burn Hospital, to study how stem cells extracted from hair follicles in normal skin can repair severely burned skin by growing new hair follicles and sweat glands.

For more information, please contact Jenny Catherine Eriksen at 617-373-2802 or at j.eriksen@neu.edu.

Archives

The following news stories and features are available. For information about older content, please contact University Communications and Public Relations at (617) 373-5471.

2010

January
February
March
April
May
June
July
August
September
October
November
December

Share



Like

2 likes. Sign Up to see what your friends like.