Providing Tools for Understanding Cell Membrane Function

Noah Malmstadt

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CURRENT RESEARCH

Microfluidic devices provide insight and direction for new drugs and biomedical therapies

Cell membranes are the most important biological interface in the body; they are the surface at which everything that controls a cell's interaction with its environment happens. Understanding how to manipulate the structure and composition of these membranes on a fundamental level would allow scientists to envision new, precise drug treatment approaches. On the front line of this effort is Dr. Noah Malmstadt, of the University of Southern California, who is investigating and applying the utility of microfluidic devices to address several detrimental diseases both in mental health (bipolar disorder, schizophrenia, anxiety, depression, post-traumatic stress disorder, and addiction) and in aging (neurodegeneration and congestive heart failure). His group aims to build artificial cells with variable membrane composition and structure to better understand how these properties might be key to advancing medical treatments against these diseases.

Investing in Dr. Malmstadt is not only an investment in future research itself but also an investment in the future scientists of our nation. The education and creative support of his students, from his research pupils to the sixth graders he inspires through outreach programs, is one of Dr. Malmstadt's unique and most upheld personal values. With ideas pouring in from all of the diverse and creative minds within his group, Dr. Malmstadt is leading a combined effort to advance experimental drug testing to a tangible level.

Dr. Malmstadt's current research portfolio includes the following diverse topics:

- Engineering 3D-Printable Microfluidic Devices: Complex networks of biomedical analytical systems will become easier to assemble with Dr....

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AFFILIATION

University of Southern California

EDUCATION

- B.S. in Chemical Engineering, 1997

California Institute of Technology

- Ph.D. in Bioengineering, 2003

University of Washington

- Postdoctoral Scholar in 2007

University of California, Los Angeles

AWARDS

- Invited attendee, 2013
- Young Investigator Award, 2012
- Finalist: 2010 and 2011
- Invited attendee, 2009
- Research Award, 2008

RESEARCH AREAS

Technology, Materials Science / Physics, Neurological / Cognitive, Cardiovascular

FUNDING REQUEST

Your contributions will support Dr. Malmstadt's research as he continues to deliver essential tools and answers to healthcare and drives it closer to uncovering preventive techniques against many detrimental diseases. Donations will alleviate personnel and equipment costs that currently hinder these projects at $500K/year. By choosing to donate, you will take an essential role in bringing the construction of artificial cells and tissues and preventing many diseases into reality.