

NAME Timothy E. McKnight		POSITION TITLE Research Scientist	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
University of Michigan	BS	1989	Engineering Science
University of Tennessee	MS	1996	Engineering Science

**PROFESSIONAL RECORD**

1989- Research Staff, Oak Ridge National Laboratory, Oak Ridge, TN  
1988-1989 Intern, Molecular Toxicology Laboratories, Dow Chemical, Midland, MI

**PUBLICATIONS**

- Holcomb D.E., **McKnight T.E.**, *Transducers for Temperature, Pressure, and Flow*, Encyclopedia of Applied Physics, Volume 22 (1998).
- Hardy J.E., Hylton J.O, **McKnight T.E.**, Ruppel F.R., and Remenyik C.J., *Flow Measurement Methods and Applications*, John Wiley and Sons, December 1998.
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Principal Investigator/Program Director (Last, first, middle): McKnight, Timothy E

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39. Yu Z, **McKnight TE**, Ericson MN, Melechko AV, Simpson ML, Morrison B, Vertically aligned carbon nanofiber array: A new type of microelectrode array for electrophysiological recording. J Neurotrauma 24 (7): 1235-1235 P22 JUL 2007.

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- 40. Fletcher BL, **McKnight TE**, Fowlkes JD, Allison DP, Simpson ML, Doktycz MJ. Controlling the dimensions of carbon nanofiber structures through the electropolymerization of pyrrole. *Synthetic Metals* 157 (2007) 282–289.
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- 43. Mann DG, **McKnight TE**, McPherson J, Hoyt P, Melechko AV, Simpson ML, Saylor S. Inducible RNAi-mediated gene silencing using nanostructured gene delivery arrays, accepted ACS Nano November 28, 2007.

## PATENTS

6,533,733 Implantable Device for In Vivo Intracranial and Cerebrospinal Fluid Pressure Monitoring.  
 6,060,315 Method for Facilitating the Introduction of Material into Cells.  
 6,982,519 Individually electrically addressable vertically aligned carbon nanofibers on insulating substrates  
 7,144,287 Individually electrically addressable carbon nanofibers on insulating substrates  
 7,229,692 Nanoconduits and nanoreplicants  
 20060292013 Magnetocaloric pump for microfluidic applications  
 20060076867 Individually electrically addressable carbon nanofibers on insulating substrates  
 20060068127 Nanotransfer and nanoreplication using deterministically grown sacrificial nanotemplates  
 20050176245 Nanotransfer and nanoreplication using deterministically grown sacrificial nanotemplates  
 20040197909 Parallel macromol delivery and biochem/electrochem interface to cells employing nanostructures  
 20040173506 Nanoengineered membranes for controlled transport  
 20030216666 Implant for in-vivo parameter monitoring, processing and transmitting  
 20030052585 Individually electrically addressable carbon nanofibers on insulating substrates

## COMPLETED RESEARCH SUPPORT

1-R01-EB000433 NIBIB PI:McKnight TE 8/1/2002-8/1/2005 50%  
 Nanoarrays for real time probing within living cells. Develop nanostructured electrode arrays for inter and intracellular electrochemical interfacing with live cells.

1-R01-EB000657 NIBIB PI: Doktycz, MJ 8/1/2002-8/1/2006 10%  
 Nanosensing and actuation using cell mimics. Co-Investigator applying nanofiber-based structures as biological membrane mimics for controlled transport and actuation. PI Doktycz, MJ

1-R21-EB004066 NIBIB PI: Simpson ML 10/1/2004-10/1/2006 10%  
 Nanostructured gene delivery arrays. Develop nanofiber based arrays for parallel impalefection of mammalian cells and generation of live cell arrays of cDNA expressing cells.

## ONGOING RESEARCH SUPPORT

R01 EB006316 NIBIB PI: McKnight TE 10/1/2005-10/1/2008 75%  
 Nanoscale Architectures for Controlled Gene Expression. Develop nanofiber based arrays for electronic modulation of tethered gene expression in tissue matrices.

R01RR018470 PI: Mazur, P 10/1/2007 – 10/1/2010 5%  
 Factors affecting ice formation in cells and their relevance to cryopreservation. Investigation of ice crystal formation in cells and tissue, including the propagation of crystals through cellular networks of gap junction coupled cells.