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- [Prospective Students](#)
- [Education](#)
- [Admissions](#)
- [Research](#)
- [People](#)
- [News](#)
- [Events](#)
- [Employment & Internships](#)
- [Facilities & Resources](#)
- [Contact BME](#)

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- [Academic Calendar](#)
- [Academic Affairs](#)

BME People

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Current Appointments

Assistant Professor, Department of Biomedical Engineering

Office

Center for Health and Healing

3303 SW Bond Avenue

Mail code: CH13B

Rm #13041

Education

BS Electrical and Biomedical Engineering, Carnegie Mellon University

PhD Vision Science (Neuroscience) University of California, Berkeley

Department(s)

Biomedical Engineering

Research Interests

Functionalized nanoparticle probes for cell-directed delivery, transport, and visualization Engineered bioplatfroms for studying molecular-scale interactions in the nervous system

Live cell stimulation and single-molecule imaging

Micro/Nanotherapies for the brain and retina

Research Group(s)

Nanobiotechnology

Nanotechnology and Neuroengineering

Neuroengineering

Selected Publications

NANOBIOTECHNOLOGY PUBLICATIONS (selected):

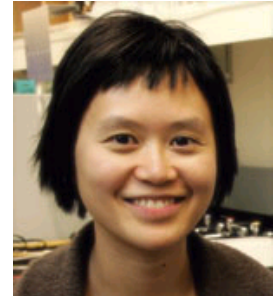
Liu HY and Vu TQ. Identification of Quantum Dot Bioconjugates and Cellular Protein Co-localization by Hybrid Gel Blotting. *Nano Letters*, accepted 2007.

Sundara Rajan S and Vu TQ. Quantum Dots Monitor TrkA Receptor Dynamics in the Interior of Neural PC12 Cells. *Nano Letters* 6(9):2049-59, 2006.

Vu TQ, Maddipati R, Blute TA, Nehilla BJ, Nusblat L, and Desai TA. Peptide-Conjugated Quantum Dots Activate Neuronal Receptors and Initiate Downstream Signaling of Neurite Growth, *Nano Letters* 5(4): 603-607, 2005.

Vu TQ, Qian H, Standaert RF, Chowdhury S, Pepperberg DR. Activation of Neural Receptor Channels Using Neurotransmitter Conjugates Designed for Surface Attachment. *Biomaterials*, 25(14):1605-2195, 2005.

Nehilla BJ, Vu TQ, and Desai TA. Stoichiometry-dependent formation of quantum dot-antibody



bioconjugates: an atomic force microscopy and agarose gel electrophoresis study. J Phys Chem B, 109, 20724-20730, 2005.

Nehilla BJ, Popat KC, Vu TQ, Chowdhury S, Standaert RF, Pepperberg DR, and Desai TA. A Neurotransmitter Analog Tethered to a Silicon Platform for Neuro-bioMEMS Applications, Biotechnology and Bioengineering, 87(5):669-674, 2004.

Saifuddin U, Vu TQ, Rezac M, Qian H, Pepperberg DR, Desai TA. Toward Development of Bioactive, Neurotransmitter-immobilized Surfaces for Interaction with Post-synaptic Membrane Receptors. Journal of Biomedical Materials Research, 66A(1):184-191, 2003.

NEUROSCIENCE PUBLICATIONS (selected):

Vu, TQ, Payne, JA, Copenhagen, DC. Localization and developmental expression patterns of the neuronal K-Cl cotransporter (KCC2) in the rat retina. Journal of Neuroscience 20(4):1414-23, 2000.

Krizaj D, Vu TQ, and Copenhagen DC. 1999. On the shaping, modulation, and synaptic transmission of rod and cone light responses. In The Retinal Basis of Vision, Toyoda, J., Murakami, M., Kaneko, A., and Saito, T., Eds. Amsterdam: Elsevier.

Vu, TQ, McCarthy, ST, and Owen, WG. Linear transduction of natural stimuli by dark-adapted and light-adapted rods of the tiger salamander, *Tigris Ambystoma*. Journal of Physiology 505 (1): 193-204, 1997.

PATENTS:

1. Vu, TQ and Liu, HY. A Method for Separation and Identification of Proteins Using Unconventional Gel Electrophoresis and Nanoparticle Quantum Dot Tags Provisional Patent Application, 10/23/06.

2. Vu, TQ. Nanoparticle Platforms for Sorting, Capture, and Placement of Cells, Patent Application 7/25/06.

Principal Investigator(s)



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