Yun Chen

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Education

08/2001-05/2007	Doctor of Philosophy, Biomedical Engineering, University of North Carolina, NC, USA
09/1998-06/2000	Master of Science, Immunology, National Taiwan University, Taiwan
09/1994-06/1998	Bachelor of Science, Zoology, National Taiwan University, Taiwan

Employment History

05/2013-	Research Fellow, National Cancer Institute, National Institutes of Health
09/2010- 05/2013	NIH Intramural Research Training Award Fellow, National Institutes of Health
09/2007-09/2010	NIST/NIH Joint Research Associate, National Research Council
08/2001-05/2007	Graduate Research Assistant, Department of Biomedical Engineering/ Department of Cell and Developmental Biology, University of North Carolina, Chapel Hill, NC
09/1998-06/2001	Research Assistant, Institute of Molecular Biology, *Academia Sinica*, Taipei, Taiwan

Honor

06/1998	*Summa Cum Laude*, National Taiwan University,
09/2007-09/2010	National Research Council (NRC) Research Associate Award

Innovation Portfolio

Provisional Patent

Approach to Magnetic Uncaging for Control of Biological Processes and Drug Delivery.
Inventors: James P. Sumner, **Yun Chen**, Alan P. Koretsky , Richard Conroy .

Technology Transfer

Licensing of target activated microtransfer (United States Patent No. 8,460,744) to Roche.
National Institutes of Health Representing R&D Scientists: Michael Tangrea, Michael Emmert-Buck, Thomas J. Pohida, **Yun Chen**, Robert F. Bonner, Michael Armani

Licensing of methods and systems for purifying, transferring, and/or manipulating nucleic acids (United States Patent No. US20110287951 A1) to Fairfax Group.
National Institutes of Health Representing R&D Scientists: Michael Tangrea, Michael Emmert-Buck, Jaime Rodriguez, **Yun Chen**, Michael Armani

Publications

Published and accepted papers in peer reviewed journals

Hipp J.D., Johann, D., **Chen Y.**, Madabhushi A., Monaco J., Cheng J., Rodriguez-Canales, J., Riedlinger, G., Rosenberg, A.Z., Hanson, J.C., Kunju, L.P., Emmert-Buck, M.R., Balis U.J., Tangrea, M.A. Computer Aided Laser Dissection (CALD): A Redesigned Microdissection Workflow Using Image Analytics. *Journal of Pathology Informatics* 2014, Accepted

Porat-Shliom N., **Chen Y.**, Masedunskas A., Tora M., Shitara A. and Weigert R.: *In vivo* tissue-wide synchronization of mitochondrial metabolic oscillations. *Cell Reports* 2014; 9(2): 514–521

Chen, Y., Pasapera, A.M., Koretsky, A.P., and Waterman, C.M.: Orientation-specific responses to sustained uniaxial stretching in focal adhesion growth and turnover. *Proceedings of the National Academy of Sciences* 2013; 110: E2352–E2361. **Featured in Faculty 1000**

Chen, Y., Dodd, S.J., Tangrea, M.A., Emmert-Buck, M.R., and Koretsky, A.P.: Measuring collective cell movement and extracellular matrix interactions using magnetic resonance imaging. *Scientific Reports* 2013; 3, 1879.

Qian, C., Yu, X., Chen, D.Y., Dodd, S., Bouraoud, N., Pothayee, N., **Chen, Y.,** Beeman, S., Bennett, K., Murphy-Boesch, J., and Koretsky, A.P.: Wireless Amplified Nuclear MR Detector (WAND) for High-Spatial-Resolution MR Imaging of Internal Organs: Preclinical Demonstration in a Rodent Model. *Radiology* 2013; 268: 228–236.

Chen Y., Guzik S., Sumner J.P., Moreland J., Koretsky A.P.: Magnetic manipulation of actin orientation, polymerization, and gliding on myosin using superparamagnetic iron oxide particles. *Nanotechnology* 2011; 22(6): 065101

Chen Y., Veracini L., Benistant C., Jacobson K.: The transmembrane protein CBP plays a role in transiently anchoring small clusters of Thy-1, a GPI-anchored protein, to the cytoskeleton. *Journal of Cell Science* 2009; 122(Pt 21): 3966-72.
Thelin WR, **Chen Y.**, Gentzsch M., Kreda, S.M., Sallee J.L., Scarlett, C.O., Borchers C.H., Jacobson K., Stutts M.J., Milgram S.L.: Direct interaction with filamins modulates the stability and plasma membrane expression of CFTR. *Journal of Clinical Investigation* 2007; 117(2): 364-74.

Chen Y, Thelin W.R., Yang B., Milgram SL., Jacobson K.: Transient anchorage of cross-linked glycosyl-phosphatidylinositol-anchored proteins depends on cholesterol, Src family kinases, caveolin, and phosphoinositides. *Journal of Cell Biology* 2006; 175(1): 169-78. **Featured in Faculty 1000**

Chen Y., Lagerholm BC., Yang B., Jacobson K.: Methods to measure the lateral diffusion of membrane lipids and proteins. *Methods* 2006; 39(2): 147-53.

Peterson L. J., Rajfur Z., Maddox A.S., Freel C.D., **Chen Y**, Edlund M., Otey C., Burridge K.: Simultaneous stretching and contraction of stress fibers in vivo. *Molecular Biology of Cell* 2004; 15(7): 3497-508.

Chen Y., Yang B., Jacobson K.: Transient confinement zones: a type of lipid raft? *Lipids* 2004; 39(11): 1115-9.

Chen Y. Lai M.Z.: c-Jun NH2-terminal kinase activation leads to a FADD-dependent but Fas ligand-independent cell death in Jurkat T cells. *Journal of Biological Chemistry* 2001; 276(11): 8350-7.

Papers submitted or in preparation

Acquavella, N., Yu, Z., Roelke-Parker, M., Palmer, D., Xi, D., Pflicke, H., Ji, Y., Gros, A., Hanada, K., **Chen Y.**, Crompton, J.G., Klebanoff, C.A., Roychoudhuri, R., Sukumar1, Zulmarie Franco, M., Mehta, G., Hipp, J., Gattinoni, L., Lee, C., Raffeld, M., Bosenberg M.W., Rosenberg, S.A., Restifo, N.P. Antitumor CD8 T cell immunity delays the emergence of vemurafenib-resistant melanoma. *Submitted*

McDermott, M.; Thelin, W.R., **Chen, Y**., Lyons, P.T., Reilly, G., Gentzsch, M.; Lei, C; Hong W., Stutts M.G., Playford, M.P., Bankaitis, V.A. Sorting Nexin 27 (SNX27): A Novel Regulator of Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) Trafficking. *Submitted.*

Armani, M., Rosenberg, A., Fetsch, P., Xi, L., Pham, T., Raffeld M., **Chen, Y.,** O'Flaherty, N., Stussman R., Blackler, A., Du, Q., Hanson, J., Roth, M., Filie, M., Roh, M., Emmert-Buck, M., Jason Hipp, J.: A Do-It-Yourself, High-Throughput Microdissection System. *Submitted.*

Chen, Y., Porat-Shliom N., Soto Pantoja, D., Tangrea, M.A., Emmert-Buck, M.R.: Effective Delivery of Nano-Sized Drug Carriers Using Dynamic Magnetic Shift. *Submitted*

Chen, Y., Stussman, R. , Weigert R.: Developing Analytic Suite for Intravital Image Processing. *In Preparation*

Published conference abstracts

Induction of Carcinoma-Associated Fibroblasts in 3D Cell Coculture. Jeffery Hanson, **Yun Chen**. 2014 American Society for Cell Biology -International Federation for Cell Biology Meeting

Developing Mitochondrial Enrichment for Targeted Analysis (META) to Study Phosphorylation Kinetics. Mingyoung Ryoo, Olivia Harding, Michael Tangrea, Roberto Weigert, Akiko Shitara, Jeffery Hanson, Avi Rosenberg, Natalie Porat-Shliom, **Yun Chen**. 2014 American Society for Cell Biology -International Federation for Cell Biology Meeting. Dec. 2014. **Selected for Travel Award.**

Fibroblast Phenotype Transformation by Cocultured Cancer Epithelial Cells. Rebecca S. Stussman, **Yun Chen.** 58th Annual Meeting of Biophysical Society. Feb 2014

Diffusion Discrepancy between Stroma of Tumor and Normal Tissues. **Yun Chen**, Avi Rosenberg, Michael Tangrea, Michael Emmert-Buck. 58th Annual Meeting of Biophysical Society. Feb 2014

Orientation-Specific Responses to Uniaxial Stretching in Focal Growth and Adhesion Turnover. **Yun Chen,** Ana Pasapera, Alan Koretsky, Clare Waterman. The 51st Annual Meeting of the American Society for Cell Biology. December 2012

Magnetic manipulation of actin orientation, polymerization, and gliding on myosin using superparamagnetic iron oxide particles. **Yun Chen**, James Sumner, John Moreland, Alan Koretsky. 8th International Conference on the Scientific and Clinical International Conference on the Scientific and Clinical Applications of Magnetic Carriers, Rostock, Germany. May 2010

Biased gliding of magnetized actin cytoskeleton in applied magnetic field. **Yun Chen**, James Sumner, Richard Conroy, John Moreland, Alan Koretsky. The 48th Annual Meeting of the American Society for Cell Biology. December 2008

Identification of a Transmembrane Protein, CBP, Responsible for Transiently Anchoring Small Clusters of Thy-1, a GPI-anchored Protein, to the Cytoskeleton**. Y. Chen**, C. Benistant, K. Jacobson. The 47th Annual Meeting of the American Society for Cell Biology. December 2007

Looking for Lipid Rafts. Ken Jacobson & **Yun Chen**. Biophysical Society 2007 Meeting

Cholesterol, Src Family Kinases And Caveolin-dependent Transient Anchorage Of Cross-linked Glycosyl-phosphatidylinositol-anchored Proteins. **Yun Chen**, William R. Thelin, M. Shawn Janairo, Bing Yang, Sharon L. Milgram, Ken Jacobson. The 46th Annual Meeting of the American Society for Cell Biology. December 9-13, 2006

Nanoscale signal transduction across the plasma membrane. **Yun Chen**, William Thelin, Bing Yang, Sharon Milgram, Ken Jacobson. Lipid Rafts and Cell Function Discussion at Keystone Symposia D2 2006

Nanoscale signal transduction across the plasma membrane, **Yun Chen**, Bing Yang, William Thelin, Sharon Milgram, Ken Jacobson. The 45th Annual Meeting of the American Society for Cell Biology. December 2005

Transient Confinement Zones and Lipid Rafts. **Yun Chen,** Bing Yang, Ken Jacobson. The 44th American Society for Cell Biology Annual Meeting. December 4-8, 2004

Crosslinking-Dependent Transient Confinement Zone Formation Is Related To Cholesterol And Src Family Kinases. **Yun Chen,** Bing Yang, Ken Jacobson. 2004 Biophysical Discussions, Biophysical Society, October 29th, 2004

Invited Talk

Nanosclae Signal Transduction across the Plasma Membrane: How GPI-Anchored Proteins in Rafts Accomplish Transmembrane Signaling, Membrane Dynamics Session at Biophysical Society Meeting, March 2007

Mechnosensitive Biomolecules and the Regulation of Mechanosignaling Pathways. Oxbridge Conference on Life Sciences. Oxford, United Kingdom, 2012

Studying Cell Mechanics Using Quantitative Imaging Methods. University of Connecticut, Biomedical Engineering Department Seminar. April 2014

Mechanosignaling at Micron-Scale: How Cells Communicate via Force Generation and Sensing. IBM Thomas J. Watson Research Center. June 2014

Imaging Tumor Microenvironment. Laboratory of Biophotonics Imaging Technologies, Johns Hopkins University. August 2014

Imaging mechanosignaling in cancer cells. Department Seminar, Department of Physics, University of Colorado at Colorado Springs, November 2014

Mechanosignaling at Micron-Scale: How Cells Communicate via Force Generation and Sensing. DuPont Central Research and Development, Wilmington, DE. January 2015

At the Interface between Physics and Biology: an Exciting Time to Study Mechanobiology, Cancer Mechanics and Quantum Biology. Department Colloquium Seminar, Department of Physics, University at Buffalo, New York. February 2015

Mechanosignaling at Micron-Scale: How Cells Communicate via Force Generation and Sensing. Mechanical Engineering Seminar. Mechanical Engineering Department, Johns Hopkins University, Baltimore, MD. February 2015

Teaching and Mentoring Experience

2014 – Mentor of NCI Clinical Research Intern Fellow
2014 Completion Credit for Course "Scientists Teaching Science"
2008 – 2013 NIH Summer Intern Mentor
2004 – 2006 Teaching Assistant of Course "Light Microscopy Laboratory"

Leadership Activities

2013 – Founding Member of Clinical Microdissection Initiative Consortium
2012 – Founding Member of the Potomac Chapter of the Society for Neuroscience

Manuscript Peer Reviewer

2011 – Reviewer for *Molecular Imaging*
2012 – Reviewer for *PlosOne*
2013 – Reviewer for *Chemical Engineering Science*
2014 – Reviewer for *International Journal of Nanomedicine*