

MARY N. TERUEL, Ph.D.

Curriculum Vitae

EDUCATION

- 1985 B.S., Mechanical Engineering, University of Pennsylvania, Philadelphia, PA. Admitted 1 year early from high school. Recipient of Henry Jayne LeBarre Prize for best English Composition by a member of the Freshman Class (out of 2000 freshman).
- 1989 M.S., Aeronautics and Astronautics, School of Engineering, Stanford University, Stanford, CA.
- 1996 Ph.D., Aeronautics and Astronautics, School of Engineering, Stanford University, Stanford, CA. Advisors: John K. Eaton, Ph.D. and Peter Bradshaw, Ph.D.
- 1998-2000 Postdoctoral Fellow, Dept. of Cell Biology. Duke University, Durham, NC. Advisor: Michael P. Sheetz, Ph.D.

PROFESSIONAL EXPERIENCE

- 1985-1986 Helicopter Structural Test Engineer, Kaman Aerospace Corporation, Bloomfield, CT.
- 1986-1987 Test Engineer, Kronos Incorporated, Waltham, MA.
- 1988 Research Assistant, Dept. of Electrical Engineering, Stanford University. Space Shuttle Electrodynamic Tether System Mission.
- 1988-1989 Research Assistant, Dept. of Aeronautics and Astronautics, Stanford University. Developed computational fluid dynamics computer programs to model hypersonic duct flow.
- 1989-1995 Research Assistant, NASA Ames Research Center and the Dept. of Mechanical Engineering, Thermosciences Division, Stanford University.
- 1995-1998 Microscopy Engineer, Dept. of Cell Biology, Duke University, Durham, NC. Designed, built and implemented microporation device, dual-color confocal microscope, video-rate image capturing system, and other biomedical instrumentation. Carried out first published CFP/YFP FRET confocal imaging study. Responsible for design and initial setup of two-photon microscopy facility for 5-laboratory group.
- 1998-2000 Postdoctoral Fellow, Dept. of Cell Biology, Duke University. Durham, CC.
- 2000 -2005 Microscopy, Imaging, and Analysis Consultant for the Alliance for Cellular Signaling.
- 2000 -2006 Senior Research Scientist, Dept. of Molecular Pharmacology, Stanford University, Stanford, CA. Developed the first low resolution total-internal reflection microscopy imaging system (ESCAT) where plasma-membrane translocation can be measured simultaneously in thousands of individual cells. Used this system to carry out single-cell kinetic studies of Ca²⁺ and lipid second messenger signaling.

- 2007-2009 Visiting Scientist with Professor Ruedi Aebersold, Institute for Molecular Systems Biology, ETH Zürich, Zürich, Switzerland. Developed selective-reaction monitoring (SRM) mass spectrometry techniques for monitoring networks of low-abundant signaling proteins involved in calcium and insulin/PIP3 signaling.
- 2009-2011 Senior Research Scientist, Dept. of Chemical and Systems Biology, Stanford University, Stanford, CA. Developed high-throughput proteomics and genomic strategy combining mass spectrometry, bioinformatics, mass spectrometry, RNAi and DNA construct libraries, single-cell fluorescence imaging in 96-well format, and image analysis to identify the molecular players and mechanisms controlling adipocyte cell function.
- Nov. 2011- Assistant Professor, Dept. of Chemical and Systems Biology, Stanford University, Stanford, CA.
- Nov. 2011- Member of the Stanford Cardiovascular Institute
- July 2013- Co-Investigator and Co-Director of the Technology Core, Stanford NIH Center for Systems Biology (P50)
- May 2014- Member of the Stanford Cancer Institute
- May 2015- Faculty Fellow, Stanford Institute for Chemistry, Engineering, and Medicine for Human Health (CHEM-H)
- Nov 2016- Assistant Professor (by courtesy), Dept. of Bioengineering, Stanford University, Stanford, CA.

PROFESSIONAL MEMBERSHIPS

- Member, American Society of Mass Spectrometry
 Member, US Human Proteome Organization
 Member, American Institute of Aeronautics and Astronautics
 Member, American Society of Cell Biology

HONORS AND FELLOWSHIPS

- 1989-1993 National Air and Space Administration (NASA) Graduate Student Fellowship
- 1998-2000 National Institutes of Health Postdoctoral Fellowship
- 2001-2006 National Institutes of Health Quantitative Mentored Career Development Award
- 2007 *Biochemical Journal* Young Investigator Award
- 2011-present Stanford Gabilan Fellow

PATENTS FILED

- Simultaneous Monitoring of Specific Cell Functions in Large Numbers of Cells (Stanford Docket S00-120)

EDITORIAL SERVICE

Reviewer for *Science*, *Cell Metabolism*, *Cell Systems*, *Molecular Systems Biology*, *Nature Biotechnology*, *Nature Structural Biology*, *Stem Cell Reports*.

GRANTS

Current Funding

NIH RO1 1-RO1-DK101743-01 Teruel (PI) 2/1/15-1/31/18
"Controlling the rate of terminal cell differentiation: experiments and theory"

NIH RO1 1-RO1-DK106241-01 Teruel (PI) 8/1/15-7/31/19
"Controlling tissue size by noise and feedback"

NIH 1 P50 GM107615-01 Ferrell(PI) 7/1/13 – 6/30/18
"Systems Biology of Collective Cell Decisions"
The overarching aim of this Center is to understand the systems-level basis for cellular decision-making in the interrelated processes of proliferation, migration, and differentiation.
Role: Co-Investigator and Director of Technology Core

BioX Seed Grant Teruel (PI) 10/1/14-9/30/17
"Hormonal control of fat cell differentiation"

Stanford Diabetes Center Seed Grant Teruel (PI) 1/1/17-12/31/17
"Understanding the mechanisms underlying FABP4 function in adipocytes and adipogenesis"

Past

BioX/Sanofi Seed Grant Teruel (PI) 5/1/14-8/30/15
"Identifying novel treatments for insulin resistance"

Stanford Cardiovascular Institute Seed Grant Teruel (PI) 10/1/11 – 9/31/12
"Using selected reaction monitoring (SRM) mass spectrometry to correlate adipocyte nuclear state to the severity of atherosclerosis"

SERVICE TO THE DEPARTMENT AND INSTITUTION

2010-2012 Department of Chemical and Systems Biology Seminar Coordinator

2011-present Stanford Undergraduate Pre-major Advisor to six science and engineering freshman each year

2011-present Department of Chemical and Systems Biology Graduate Training Program Advisor

2011-2014 Member of the Stanford Dean's Fellowship Committee which reviews applications and awards 25 postdoctoral fellowships two times per year

- Fall 2012 Wrote major part of successful P50 NIH Center for Systems Biology Program Grant (PI: James Ferrell). The Stanford NIH Center for Systems Biology focused on the Systems Biology of Collective Cell Decisions was funded starting July 2013.
- Winter 2013 Wrote bulk of successful NIH Shared Instrumentation S10 Grant for high-content confocal imaging system (PI: Tobias Meyer, awarded July 2014).
- 2014-present Co-organizer (with Tobias Meyer and James Ferrell) of the Stanford Center of Systems Biology which provides \$100,000 in seed grants per year, funds 4 PhD students per year, provides funding for 14 PI's at Stanford and UC Berkeley, and organizes weekly seminars and symposia on Systems Biology.
- 2014-present Member of the Stanford Neuroscience Microscopy Service Advisory Board
- June 2015 Represented the Stanford SPARK T32 Training Grant (T32 GM113854-27) at the NIGMS-sponsored Training, Workforce Development, and Diversity Program Directors' Meeting, Chantilly, VA.
- 2016-present Department of Chemical and Systems Biology Cutting Seminar Coordinator

SERVICE TO THE PROFESSION

- November 2002 NCI Study Section: Innovative Technologies for the Molecular Analysis of Cancer National Cancer Institute
- March 2006 NIH Study Section on Microscopy and Imaging
- February 2007 NIH Study Section on Microscopy and Imaging
- June 2011 NIH Study Section on Cell, Molecular, and Computational Biology
- March 2012 NIH Study Section on Fellowships in Chemistry, Biochemistry, Biophysics, and Bioengineering
- March 2012 Program Review of the UCLA Department of Molecular and Medical Pharmacology (27 primary faculty, 62 graduate students). Carried out at the request of the UCLA Academic Senate.
- February 2015 Grant reviewer for the Swiss National Science Foundation
- April 2015 American Heart Association Study Section on Lipoproteins-Lipid Metabolism & Nutrition, Basic Science

TEACHING EXPERIENCE

- September 2000 Faculty member for the 10-day EMBO Course on ***GFP and Advanced Microscopy in Cell Biology***, Max Planck Institute, Goettingen, Germany
- Spring 2001 Lecturer in the 10-week Stanford University Graduate Student Course: ***Imaging and Biological Light Microscopy***

Spring 2003 Course Director of the 10-week Stanford University Graduate Student Course: ***Imaging and Biological Light Microscopy***

Spring 2004, 2005 Lecturer in the 10-week Stanford University Graduate Student Course: ***Imaging and Biological Light Microscopy***

Winter 2009 Lecturer in the Stanford University Graduate Student Course: ***Cell Signaling (CSB 210)***

Fall 2010 Course Director of the Stanford University Graduate Student Course: ***Research Seminars in Chemical and Systems Biology (CSB 270)***

Winter 2010 Lecturer in Stanford University Graduate Student Course: ***Cell Signaling (CSB 210)***

Fall 2011 Developed and served as Course Director of the 10-week Stanford University Graduate Student Course: ***Current Topics in Proteomics (CSB 230)***

Winter 2011 Course Director of Stanford University Graduate Student Course: ***Research Seminars in Chemical and Systems Biology (CSB 270)***

Winter 2011 Lecturer in the Stanford University Graduate Student Course: ***Systems Biology (CSB 278)***

Winter 2012-2013 Lecturer in the Stanford University Graduate Student Course: ***Cell Signaling (CSB 210)***

Winter 2012-2014 Director of the Stanford University Graduate Student Course: ***Research Seminars in Chemical and Systems Biology (CSB 270)***

Fall 2013 Co-Director of the Chemical and Systems Biology Incoming Student Bootcamp

Winter 2014 Instructor in the Stanford University Graduate Student Course: ***Cell Signaling (CSB 210)***

Fall 2014 Director of the Chemical and Systems Biology Incoming Student Bootcamp

Winter 2015 Instructor in the Stanford University Graduate Student Course: ***Cell Signaling (CSB 210)***

Winter 2016 Instructor in the Stanford University Graduate Student Course: ***Cell Signaling (CSB 210)***

Fall 2016,
Winter 2017,
Spring 2017 Director of the Stanford University Graduate Student Course: ***Research Seminars in Chemical and Systems Biology (CSB 270)***

Winter 2017 Co-Director of the Stanford University Graduate Student Course: ***Cell Signaling (CSB 210)***

Spring 2017 Director of the Stanford University Graduate Student Course: ***Imaging: Biological Light Microscopy (CSB 222)***.

INVITED LECTURES

- July 1998 “Electroporation-induced Formation of Individual Calcium Entry Sites in the Cell Body and Filipodia of Adherent Cells,” Gordon Research Conference on Bioelectric Fields, Henniker, NH.
- August 1999 “Fluorescence imaging of signaling networks,” Microscopy Society of America Annual Meeting, Portland, OR. Session on Novel Approaches to Microscopy of Living Cells
- September 2000 “Fluorescence imaging of signaling networks,” Max Planck Institute, Goettingen, Germany.
- April 2002 “Parallel Single Cell Monitoring of Receptor-Triggered Membrane Translocation of a Calcium Sensing Protein Module,” Merck Pharmaceuticals, North Wales, PA.
- June 2002 “Parallel Single Cell Monitoring of Receptor-Triggered Membrane Translocation of a Calcium Sensing Protein Module,” FASEB Conference on Calcium Signaling and Cell Function, Salt Lake City, Utah.
- July 2002 “Parallel Single Cell Monitoring of Receptor-Triggered Membrane Translocation of a Calcium Sensing Protein Module,” Innovative Molecular Analysis Technologies (IMAT) Meeting, NIH/NCI, Chantilly, VA.
- August 2007 “Identification of PIP3-regulated Proteomes from C.elegans to human by Model Prediction and Live Imaging,” FASEB Conference on Glucose Transporters, Snowmass, CO.
- September 2007 “Understanding lipid second messenger signaling networks,” ETH Zürich, Institute of Molecular Systems Biology, Zurich, Switzerland.
- November 2007 “Understanding lipid second messenger signaling networks,” Janelia Farm Research Conference on Phosphoinositides, Howard Hughes Medical Institute, Ashburn, VA.
- February 2008 “Control of plasma membrane translocation,” UCLA Dept. of Physiological Sciences, Los Angeles, CA.
- March 2008 “Control of plasma membrane translocation,” University of Pennsylvania, Dept. of Bioengineering, Philadelphia, PA.
- April 2008 “Control of plasma membrane translocation: dynamics insights into the logic of cell signaling,” Max Planck Institute for Biochemistry, Martinsreid, Germany
- April 2008 “Control of plasma membrane translocation: dynamics insights into the logic of cell signaling,” Duke University, Dept. of Pharmacology, Durham, NC.
- June 2008 “Control of plasma membrane translocation: dynamics insights into the logic of cell signaling,” Frontiers in Membrane Biology Symposium, Kobe, Japan.
- April 2010 “A functional proteomics approach to understand the fat cell signaling network,” Stanford University Cardiovascular Institute Symposium, Stanford, CA.

- April 2010 “A functional proteomics approach to understand the fat cell signaling network,” American Society of Biochemistry and Molecular Biology (ASBMB) Annual Meeting, Anaheim, CA.
- May 2010 “Using selective reaction monitoring (SRM) mass spectrometry to quantify protein copy number and robustness in the calcium signaling network”, American Society of Mass Spectrometry Annual Meeting, Salt Lake City, Utah.
- June 2010 “Using selective reaction monitoring (SRM) mass spectrometry to quantify protein copy number and robustness in the calcium signaling network”, FASEB Summer Research Conference on Calcium and Cell Function, Steamboat Springs, CO.
- February 2011 “Using single-cell imaging and Selective Reaction Monitoring (SRM) mass spectrometry to unmask the feedback loops controlling adipogenesis”, Stanford University Dept. of Endocrinology, Stanford, CA.
- March 2011 “Using single-cell imaging and Selective Reaction Monitoring (SRM) mass spectrometry to unmask the feedback loops controlling adipogenesis”, U.S. Human Proteome Organization (HUPO) Annual Meeting, Raleigh, NC.
- August 2011 “Fat or no fat: breaking the code of a key cellular decision process,” U.C. Berkeley, Dept. of Nutritional Science and Toxicology, Berkeley, CA.
- Sept. 2011 “Fat or no fat: breaking the code of a key cellular decision process,” Obesity Summit, Stanford University, Stanford, CA.
- Sept. 2011 “Using selective reaction monitoring (SRM) mass spectrometry to quantify protein copy number and robustness in the calcium signaling network”, Stanford University Mass Spectrometry Users Annual Meeting, Stanford, CA.
- February 2012 “Fat or no fat: breaking the code of a key cellular decision process,” Stanford Regenerative Medicine Seminar, Stanford, CA.
- March 2012 “Using single-cell imaging and Selective Reaction Monitoring (SRM) mass spectrometry to unmask the feedback loops controlling adipogenesis”, U.S. Human Proteome Organization (HUPO) Annual Meeting, San Francisco, CA.
- July 2012 “Fat or no fat: breaking the code of a key cellular decision process,” Kern Lipid Conference on Systems Biology, Lipidomics and Cardiometabolic Diseases, Aspen, CO.
- November 2012 “Fat or no fat: breaking the code of a key cellular decision process,” Uppsala University, Department of Medical Cell Biology, Uppsala, Sweden.
- November 2012 “Fat or no fat: breaking the code of a key cellular decision process,” EMBL Symposium: From Functional Genomics to Systems Biology, Heidelberg, Germany
- June 2013 “Controlling the rate of terminal cell differentiation,” The International Conference on the Systems Biology of Disease, German Cancer Institute, Heidelberg, Germany.
- August 2013 “Feedback control of cell differentiation,” q-bio 2013 Conference on Cellular Information Processing, St. Johns College, Santa Fe, NM.

- October 2013 “Feedback control of cell differentiation,” University of Chicago, Institute of Genomics and Systems Biology, Chicago, IL.
- October 2013 “Feedback control of cell differentiation,” Stanford Biology Thinks Big Symposium, Stanford, CA.
- February 2014 “Controlling low rates of terminal cell differentiation with noise and ultra-high feedback,” Second Annual Winter q-bio Conference, Kona, Hawaii.
- June 2014 “Feedback control of cell differentiation”, Sanofi/Aventis, Frankfurt, Germany.
- July 2014 “Controlling low rates of terminal cell differentiation with noise and ultra-high feedback,” NIH National Centers for Systems Biology Annual Meeting, San Diego, CA.
- October 2014 “Controlling low rates of adipogenesis with noise and ultra-high feedback,” Cell Press Symposia: Systems Approach to Metabolic Diseases, Chicago, IL.
- October 2014 “Controlling the size of tissue with stochastic noise”, Stanford Regenerative Medicine Seminar, Stanford, CA.
- December 2014 “Controlling the size of tissue with stochastic noise,” Minisymposia on Cell Signaling and Decision Making, American Society of Cell Biology (ASCB) Annual Meeting, Philadelphia, PA.
- February 2015 “Feedback control of mammalian cell differentiation”, Third Annual Winter Quantitative Biology (q-bio) Conference, Maui, Hawaii.
- March 2015 “Feedback control of mammalian cell differentiation”, Society for Developmental Biology, West Coast Meeting, Yosemite, CA.
- April 2015 “Feedback control of mammalian cell differentiation”, EMBO|EMBL Symposium: Cellular Heterogeneity: Role of Variability and Noise in Biological Decision-Making, Heidelberg, Germany.
- April 2015 “Feedback control of mammalian cell differentiation”, Friedrich Miescher Institute (FMI) for Biomedical Research, Basel, Switzerland.
- May 2015 “Feedback control of mammalian cell differentiation”, Program in Vascular Biology, UCLA, Los Angeles, CA.
- July 2015 “Feedback control of mammalian cell differentiation”, International Conference on the Systems Biology of Disease, German Cancer Institute, Heidelberg, Germany.
- August 2015 “Feedback control of mammalian cell differentiation”, EMBO workshop on Cell and Developmental Systems, Arolla, Switzerland.
- September 2015 “Controlling tissue size with noise and ultra-high feedback”, 14th Human Proteome Organization World Congress – HUPO 2015, Session on Protein Networks and Systems Biology, Vancouver, Canada.
- October 2015 “Controlling tissue size with noise and ultra-high feedback”, Keystone Symposium on Diabetes: New Insights into Molecular Mechanisms and Therapeutic Strategies, Kyoto, Japan.

- November 2015 “Feedback control of mammalian cell differentiation”, Dept. of Biomedical Engineering, Georgia Institute of Technology and Emory University, Atlanta, Georgia.
- December 2015 “A circadian code for fat cell differentiation”, Minisymposium on Signaling and Differentiation, American Society of Cell Biology (ASCB) Annual Meeting, San Diego, CA.
- January 2015 “A circadian code for fat cell differentiation”, Stanford Cardiovascular Institute, Stanford, CA.
- February 2016 “Feedback control of mammalian cell differentiation”, Biophysical Society Annual Meeting, Symposium on Synthetic Biology and Systems Biology, Los Angeles, CA.
- February 2016 “A circadian code for fat cell differentiation”, Stanford Bio-X IIP Symposium, Stanford, CA.
- June 2016 “Transcription factor dynamics define a circadian code for fat cell differentiation”, Japanese Society of Cell Biology Annual Meeting, Kyoto, Japan.
- July 2016 “Transcription factor dynamics define a circadian code for fat cell differentiation”, q-bio 2016: Quantitative and Systems Biology in Nashville Conference, Nashville, TN.
- October 2016 “Feedback control of mammalian cell differentiation”, Biozentrum and University of Basel, Basel, Switzerland.
- October 2016 “Molecular mechanisms controlling mammalian cell differentiation”, University of Mississippi Medical Center, Jackson, Mississippi.
- November 2016 “A circadian signaling code restricts fat cell differentiation”, NIH/NIDDK Workshop on the Adipose Tissue Niche, Bethesda, MD.
- January 2017 “A circadian signaling code restricts the rate of cell differentiation”, Stanford Bioengineering Dept. Seminar, Stanford, CA.
- January 2017 “A circadian signaling code restricts the rate of cell differentiation”, UCSF/Gladstone Institutes Convergence Seminar Series, UC San Francisco, San Francisco, CA.
- January 2017 “A circadian signaling code restricts the rate of cell differentiation”, Keystone Symposia on Obesity and Adipocyte Biology, Keystone, CO.
- February 2017 “A circadian signaling code restricts the rate of cell differentiation”, Fifth Annual Quantitative Biology (q-Bio) Conference, Kauai, Hawaii.
- April 2017 “Molecular mechanisms controlling adipocyte differentiation”, Stanford Diabetes Symposium, Stanford, CA.
- May 2017 “Feedback control of mammalian cell differentiation”, First Latin American Workshop and Conference on Systems Biology, Mexico City, Mexico.

POSTDOCTORAL AND STUDENT RESEARCH SUPERVISED

Postdoctoral researchers:

Kangbeom Kwan, 2009-2010

Main Project: “An siRNA screen to uncover regulators of adipogenesis”

Current Position: Associate Professor, Dept. of Physiology, Wonkwang University, South Korea.

Byung Ouk Park, 2009-2012

Main project: “Single-cell imaging approach to identify and dissect the bistable switch controlling preadipocyte to adipocyte conversion”

Education: B.S. in Biochemistry, Gyeongsang National University, Korea.

Ph.D. in Molecular Biology and Biotechnology, Gyeongsang National University, Korea.

Current position: Research Scientist, Institute for Basic Science, South Korea.

Robert Ahrends, 2010-2013

Main project: “Targeted proteomics to understand how to control low rates of terminal cell differentiation”

Education: Diploma in Biology, U. of Giessen, Germany.

Ph.D. in Chemistry, Humboldt University, Berlin, Germany.

Current position: Independent Group Leader in Systems Biology, Leibniz Institute for Analytical Sciences, Dortmund, Germany.

Asuka Ota, 2011-2014

Main project: “Using targeted proteomics to identify novel regulators of insulin sensitivity.”

Education: B.S. in Microbiology, Immunology, and Molecular Genetics, UCLA.

Ph.D. in Molecular, Cellular, and Integrative Physiology, UCLA.

Current position: Senior Scientist, Emerald Therapeutics, South San Francisco, CA.

Karen Tkach, 2014-2015

Main project: “Computational modeling and experiments to understand the link between hormonal oscillations and adipogenesis”

Education: B.S. in Molecular and Cell Biology, Immunology Emphasis.

q-Bio Summer School on Cellular Information Processing.

Ph.D. in Immunology, Weill Cornell Medical School, NY, NY.

Current position: Staff Writer, BioCentury Publications, Redwood City, CA.

Devon Hunerdosse, 2015-present

Main project: “Understanding the role of C/EBPB in mediating insulin resistance in adipose tissue”

Education: B.S. in Biology, Wartburg College, Waverly, Iowa.

Ph.D. in Endocrinology and Metabolism, UC Berkeley, Berkeley, CA.

Stefan Tholen, Oct. 2015-present

Education: Ph.D. University of Freiburg, Freiburg, Germany.

Prat Gupta, Nov. 2015-present

Education: Ph.D in Genetics, University of Calgary, Calgary, Canada.

Ewa Bielczyk-Maczynska, Jan. 2016-present

Education: Ph.D. in Genetics, University of Cambridge, Cambridge, England.

Brooks Taylor, March 2016-present

Education: B.S. in Bioengineering, University of Virginia, Charlottesville. VA.
Ph.D. in Bioengineering, U.C. San Diego, San Diego, CA.

Atefeh Rabinee, Feb 2017-

Education: Ph.D. in Metabolism/Cell Biology, University of Copenhagen, Denmark

Ph.D. students:

Zahra Bahrami, 2013-present

Dept. of Chemical and Systems Biology

Main project: “Understanding the dynamics of PPARG, CEBPA, and CEBPB in regulating adipogenesis”

Education: B.S. in Biology, University of Guilan, Rasht, Iran.

M.S. in Marine Biology, University of Guilan, Rasht, Iran.

M.S. in Biotechnology and Protein Science, Department of Biochemistry,
University of Oulu, Oulu, Finland

Michael Zhao, 2013-present

Dept. of Chemical and Systems Biology

Main project: “Computational modeling and experiments to understand the link between the cell cycle and terminal cell differentiation”

Education: B.S. in Bioengineering, U.C. San Diego, San Diego, CA.

Kyle Kovary, 2014-present

Dept. of Chemical and Systems Biology

Main Project: “Using selected reaction monitoring mass spectrometry to quantitate natural protein variation in single cells and infer protein-protein relationships in cell cycle regulation”

Education: B.S. in Biochemistry, U.C. Santa Cruz, Santa Cruz, CA.

Masters students:

Sabine van Schie, 2015-2016

Main project: “Understanding the mechanisms controlling chromatin opening and closing required to transition from the precursor to terminally differentiated state in adipogenesis.”

Education: B.S. and M.S. in Biotechnology, University of Leiden, Leiden, Netherlands

Bamani Balaji, 2012-2013

Main project: “Using TALENS technology to control adipogenesis”

Education: B.S. in Chemical Engineering. Caltech, Pasadena. CA.

Undergraduate researchers:

Karen Li, 2007-2009

“Developing assays for monitoring lipid droplet formation in adipocytes”

Michael Nguyen, Summer 2009

“Understanding ERK versus PI3K pathway regulation of adipogenesis”

Bryce Aebi, Summer 2011

“Developing a glucocorticoid receptor fluorescent reporter construct”

Current position: Software engineer, Yahoo, San Francisco, CA.

Christopher Brunson, 2009–2012

“Speciation of proteins regulating adipogenesis”

Current position: Medical student, UC San Francisco, San Francisco, CA.

Casey Haaland, Summer 2012

“Improving the efficiency of electrospray ionization for use in mass spectrometry”

Current position: Software engineer, Microsoft, Seattle, Washington.

Alexander Platero, Summers 2013 and 2014

“Using targeted proteomics to identify and quantify novel cycling proteins on the single-cell level”

Current position: PhD student, Johns Hopkins University Neuroscience Program

Nicole Dahal, 2013-2016

“Understanding the functional role of C/EBPB in insulin-resistant adipocytes”

Current position: Medical student, Duke University Medical School, Durham, NC

Oliva Wu, 2013-2016

“Developing a live-cell sensor for terminal cell differentiation using TALENS technology”

Current position: Graduate student at Stanford University

Mia Hutchinson, Summer 2014

“Design and construction of a perfusion system to test oscillatory input to differentiating cells”

Awards to Students/Post-docs Under Supervision:

1. Kangbeom Kwon, 2009-2010, International Fellowship from Wonkwang Univeristy, South Korea
2. Robert Ahrends, 2010-2011, Stanford Dean’s Postdoctoral Fellowship
3. Robert Ahrends, 2011-2013, German Science Foundation (DFG) Postdoctoral Fellowship
4. Christopher Brunson, Summer 2011, Stanford University Bio-X Undergraduate Research Fellowship
5. Casey Haaland, Summer 2012, Stanford University Bio-X Undergraduate Research Fellowship
6. Asuka Ota, 2012-2013, Stanford Dean’s Postdoctoral Fellowship
7. Nicole Dahal, Summer 2013, Stanford University Bio-X Undergraduate Research Fellowship
8. Alexander Platero, Summer 2013, Amgen Scholar
9. Asuka Ota, 2013-2015, American Heart Association Postdoctoral Fellowship
10. Asuka Ota, July 2013, Travel Award to attend Kern Lipid Conference, Vail, CO.
11. Alexander Platero, November 2013, Travel award to attend and give oral presentation at ABRCMS Conference, Nashville, TN.
12. Olivia Wu, Summer 2014, Stanford HEBREX Undergraduate Fellowship
13. Mia Hutchinson, Summer 2014, Stanford University Bio-X Undergraduate Research Fellowship

14. Wenting Yang, 2014-2015, Stanford Dean's Postdoctoral Fellowship
15. Devon Hunerdosse, 2016-2018, American Heart Association Postdoctoral Fellowship (received a 1.5% score, #3 out of 155 applicants)
16. Stefan Tholen, 2016-2018, German Science Foundation (DFG) Postdoctoral Fellowship
17. Brooks Taylor, 2016-2017, Stanford Endocrinology Training Grant T32 Postdoctoral Fellowship
18. Brooks Taylor, 2016-2017, Stanford Jump Start Award for Excellence in Research Award
19. Ewa Bieleczyk-Maczynska, 2016-2017, Stanford Dean's Postdoctoral Fellowship
20. Atefeh Rabinee, 2017-2021, Novo-Nordisk 4-year Postdoctoral Fellowship
21. Brooks Taylor, 2017-2019, NIH F32 Postdoctoral Fellowship (received top 1% score)

OTHER RESEARCH SUPERVISED

Ellen Abell, 2009-2011

Life Sciences Research Assistant

Main project: "Parallel adaptive feedback enhances reliability of the Ca²⁺ signaling system"

Next position: Medical Student, Loma Linda University, Loma Linda, CA.

Kyle Kovary, 2011-2014

Life Sciences Research Assistant

Main project: "Developing SRM libraries to identify nuclear signatures of metabolic disease"

Next position: PhD student, Stanford Chemical and Systems Biology Graduate Program

REFEREED PUBLICATIONS

1. **Teruel MN**, Meyer T. (1997). Electroporation-induced Formation of Individual Calcium Entry Sites in the Cell Body and Filopodia of Adherent Cells. *Biophys J*. Oct;73(4):1785-96. PMID: 9336174.
2. Oancea E, **Teruel MN**, Quest AF, Meyer T. (1998). GFP-tagged cysteine-rich domains from Protein Kinase C as fluorescent indicators for diacylglycerol signaling in living cells. *J Cell Biol*. Feb 9;140(3):485-98. PMID: 9456311.
3. Shen K, **Teruel MN**, Subramanian K, Meyer T. (1998). CaMKIIbeta functions as an F-actin targeting module that localizes CaMKIIalpha/beta heterooligomers to dendritic spines. *Neuron* Sep;21(3):593-606. PMID:9768845.
4. **Teruel MN**, Blanpied TA, Shen K, Augustine GJ, Meyer T. (1999). A versatile microporation technique for the transfection of CNS neurons. *J. Neuroscience Methods* 93: 37-48. PMID:10598863.
5. **Teruel MN**, Chen W, Persechini A, Meyer T. (2000). Differential codes for free Ca²⁺-calmodulin signals in nucleus and cytosol. *Current Biology* Jan 27;10(2):86-94. PMID:10662666.
6. Shen K, **Teruel MN**, Connor JH, Shenolikar S, Meyer T. (2000). Molecular memory by reversible translocation of calcium/calmodulin-dependent protein kinase II. *Nature Neuroscience* Sep;3(9):881-6. PMID:10966618
7. Haugh JM, Codazzi F, **Teruel MN**, Meyer T. (2000). Spatial Sensing in Fibroblasts Mediated by 3' Phosphoinositides. *J Cell Biol*. Dec 11;151(6):1269-80. PMID: 11121441.

8. Botelho RJ, **Teruel MN**, Dierckman R, Anderson R, Wells A, York JD, Meyer T, Grinstein S. (2000). Localized Biphasic Changes in Phosphatidylinositol-4,5-Bisphosphate at Sites of Phagocytosis. *J Cell Biol.* Dec 25;151(7):1353-68. PMID: 11134066.
9. Codazzi F, **Teruel MN**, Meyer T. (2001). Control of Astrocyte Ca²⁺ Oscillations and Waves by Oscillating Translocation and Activation of Protein Kinase C. *Current Biology* Jul 24;11(14):1089-97. PMID:11509231
10. **Teruel MN**, Meyer T. (2002). Parallel Single Cell Monitoring of Receptor-Triggered Membrane Translocation of a Calcium Sensing Protein Module. *Science.* Mar 8;295(5561):1910-2. PMID:11884760. Awarded an "Editors' Choice" rating by the Science Magazine signaling editors.
11. Tengholm A, **Teruel MN**, Meyer T. Single cell imaging of PI₃-kinase activity and glucose transporter insertion into the plasma membrane by dual color evanescent wave microscopy. *Science Signaling.* 2003 Feb 11;2003(169):PL4. PMID:12582202.
12. Sano H, Eguez L, **Teruel MN**, Fukuda M, Chuang TD, Chavez JA, Lienhard GE, McGraw TE. (2007). Rab10, a target of the AS160 Rab GAP, is required for insulin-stimulated translocation of GLUT4 to the adipocyte plasma membrane. *Cell Metabolism* 2007 Apr;5(4):293-303. PMID:17403373.
13. Galvez T, **Teruel MN**, Heo WD, Jones JT, Kim ML, Liou J, Myers JW, Meyer T. (2007). An siRNA screen of the signaling proteome identifies the PI3K-mTOR signaling pathway as a regulator of transferrin uptake. *Genome Biol.* 8(7): R142. PMID: 17640392.
14. Park WS, Heo WD, Whalen JH, O'Rourke NA, Bryan HM, Meyer T, **Teruel MN**. (2008). Identification of PIP₃-regulated Proteomes from C.elegans to human by Model Prediction and Live Imaging. *Molecular Cell* May 9; 30(3): 381-92. PMID: 18471983
15. Hillman RT, Feng BY, Ni J, Woo WM, Milenkovic L, Hayden Gephart MG, **Teruel MN**, Oro AE, Chen JK, Scott MP. (2011). Neuropilins are positive regulators of Hedgehog signal transduction. *Genes Dev.* Nov 15; 25(22): 2333-46. Epub 2011 Nov 3. PMID: 22051878.
16. Abell E*, Ahrends R*, Bandara S, Park BO, **Teruel MN**. (2011). Parallel adaptive feedback enhances reliability of the Ca²⁺ signaling system. *Proc Natl Acad Sci U S A.* Aug 30; 108(35): 14485-90. Epub 2011 Aug 15. *equal contribution. Awarded a "Must Read" and "Exceptional" rating by the Faculty of 1000.
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18. Chu BW, Kovary KM, Guillaume J, Chen LC, **Teruel MN**, Wandless TJ. (2013). The E3 Ubiquitin Ligase UBE3C Enhances Proteasome Processivity by Ubiquitinating Partially Proteolyzed Substrates. *J. Biol. Chem.* Nov 29; 288(48): 34575-87. Epub 2013 Oct 24. PMID: 24158444.
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