

Colorado Springs, Colorado, USA  
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### Education

- Ph.D. in Physics with distinction, University of New Mexico (UNM), 2012
- M.S. in Physics, UNM, 2008
- B.S. in Physics with honors, UNM, 2006
- B.S. in Applied Mathematics, UNM, 2006

### Professional Experience

- Assistant Professor, Department of Physics and Energy Science, UCCS BioFrontiers , UCCS, August 2013 – present
- Co-director UCCS Center for the BioFrontiers Institute, September 2014 - present
- Research Associate, UCCS BioFrontiers, June 2012 - August 2013
- Graduate Research Assistant, UNM Physics, January 2007 - May 2012
- Research Intern, Max Planck Institute of Biochemistry, Martinsried, Germany, June - August, 2006
- Undergraduate Research Assistant, May 2005 - December 2006

### Refereed Publications

Number of citations quoted from Google Scholar. H index of 3. Total Citations 44.

- R. S. Kalkur, A. C. Ballast, A. R. Triplett, K. Spendier, "Effects of Deuterium Oxide on Cell Growth and Vesicle Speed in RBL-2H3 Cells", *PeerJ* 2:e553, 2014.
- C. Aidala, L. Anaya, E. Anderssen, A. Bambaugh, A. Barron, J. G. Boissevain, J. Bok, S. Boose, M. L. Brooks, S. Butsyk, M. Cepeda, P. Chacon, S. Chacon, L. Chavez, T. Cote, C. D'Agostino, A. Datta, K. DeBlasio, L. DelMonte, E. J. Desmond, J. M. Durham, D. Fields, M. Finger, C. Gingu, B. Gonzales, J. S. Haggerty, T. Hawke, H. W. van Hecke, M. Herron, J. Hoff, J. Huang, X. Jiang, T. Johnson, M. Jonas, J. S. Kapustinsky, A. Key, G. J. Kunde, J. Kurtz, J. LaBounty, D. M. Lee, K. B. Lee, M. J. Leitch, M. Lenz, W. Lenz, M. X. Liu, D. Lynch, E. Mannel, P. L. McGaughey, A. Meles, B. Meredith, H. Nguyen, E. O'Brien, R. Pak, V. Papavassiliou, S. Pate, H. Pereira, G. D. N. Perera, M. Phillips, R. Pisani, S. Polizzo, R. J. Poncione, J. Popule, M. Prokop, M. L. Purschke, A. K. Purwar, N. Ronzhina, C. L. Silva, M. Slunicka, R. Smith, W. E. Sondheim, K. Spendier, M. Stoffer, E. Tennant, D. Thomas, M. Tomasek, A. Veicht, V. Vrba, X. R. Wang, F. Wei, D. Winter, R. Yarema, Z. You, I. Younus, A. Zimmerman, T. Zimmerman, "The Phenix Forward Silicon Vertex Detector", *Nuclear Instruments and Methodas in Physical Research A*, Volume 755, 2014. **Cited 2 times.**
- Kathrin Spendier, Satomi Sugaya, and V.M. Kenkre, "Reaction-Diffusion Theory in the Presence of an Attractive Harmonic Potential", *Phys. Rev. E*, Volume 88, 062142, 2013. **Cited 1 time.**
- Kathrin Spendier and V.M. Kenkre, "Analytic Solutions for Some Reaction-Diffusion Scenarios" *J. Phys. Chem. B*, Volume 117, Issue 49, 2013. **Cited 2 times.**
- Kathrin Spendier, Diane S. Lidke, Keith A. Lidke and James L. Thomas, "Single-particle tracking of immunoglobulin E receptors (FcεRI) in micron-sized clusters and receptor patches" *FEBS Letters*, Volume 586, Issue 4, 2012. **Cited 10 times.**
- Kathrin Spendier and James L. Thomas, "Image Correlation Spectroscopy of Randomly Distributed Disks" *Journal of Biological Physics*, Volume 37, Issue 4, 2011. **Cited 1 time.**
- Kathrin Spendier, Amanda Carroll-Portillo, Keith A. Lidke, Bridget S. Wilson, Jerilyn A. Timlin, and James L. Thomas, "Distribution and Dynamics of Rat Basophilic Leukemia Immunoglobulin E Receptors (FcεRI) on Planar Ligand-Presenting Surfaces" *Biophysical Journal*, Volume 99, Issue 2, 2010. **Cited 7 times.**

- Amanda Carroll-Portillo, Kathrin Spendier, Janet Pfeiffer, Gary Griffiths, Haitao Li, Keith A. Lidke, Janet M. Oliver, Diane S. Lidke, James L. Thomas, Bridget S. Wilson, and Jerilyn A. Timlin, "Formation of a Mast Cell Synapse: Fc $\epsilon$ RI Membrane Dynamics upon Binding Mobile or Immobilized Ligands on Surfaces" *Journal of Immunology*, Volume 184, Issue 3, 2010. **Cited 21 times.**

### **Publications Submitted**

- Kyle Culhane, Kathrin Spendier, William Townend, Ke Jiang, Robert Camley, Anatoliy Pinchuk, "Laser Assisted Deposition of Fluorescent Nanoparticles on Glass and Plastic Substrates" submitted to *J. Phys. Chem. C* January 2014.

### **Books and Book Chapter**

- Kathrin Spendier and James L. Thomas, "Spatial Patterns in Mast Cell Activation" in *Mast Cells: Phenotypic Features, Biological Functions, and Role in Immunity*, Nova Science Publishers, Inc, April, 2013.

### **Peer reviewed Conference Proceedings**

- Anatoliy O. Pinchuk, Ke Jiang, and Kathrin Spendier, "Laser-directed deposition of silver nanostructures", Plasmonics: Metallic Nanostructures and Their Optical Properties XII: Proceedings of SPIE, to be published.

### **Non-peer reviewed Publications**

- Jerilyn A. Timlin, Jesse S. Aaron, Amanda Carroll-Portillo, Bryan D. Carson, Janet R. Pfeiffer, Keith A. Lidke, Kathrin Spendier, Roberto Rebeil, Dina T. Mirijanian, Mark A. Stevens, James L. Thomas, Janet M. Oliver, Bridget S. Wilson, Alan R. Burns "Resolving Dynamics of Cell Signaling via Real-Time Imaging of the Immunological Synapse" *SAND2009-6396 Corp Org(s): Sandia National Laboratories*, Albuquerque, NM, 2009.
- Kathrin Spendier, Dimitri Kotchetkov, Douglas Fields, and Imran Younus, "Luminosity Dependence of Mean BBC multiplicity in Run-5 longitudinally polarized p+p collisions" *PHENIX Analysis Note*, Brookhaven National Laboratory, Upton, New York, 2007.

### **Provisional Patent Application**

- Anatoliy Pinchuk, Kathrin Spendier, Ke Jiang, William J. Townend, Kyle Culhane, "Laser-directed deposition of silver nanostructures", 2014.

### **Presentations at meetings and seminars presented**

#### **a. Invited Conference Talks**

- Symposium on Single Cell/Single Molecule Biology, University of New Mexico, "Laser-Directed Deposition of Metal Nanoparticles for Real-Time Micropatterning", January 2014.

#### **b. Conference/Meeting Talks**

- BioFrontiers/NIST mini-symposium, CU Boulder "Real-time imaging of cell plasma membrane curvature", July 2013.
- Boulder Summer School for Condensed Matter and Material Physics, Hydrodynamics, "Dynamics and Organization of Cell Surface Receptors", July 2011.
- UNM Spatio Temporal Modeling Center External Advisory Board Meeting, "Modeling the Kinetics of RBL IgE (Fc $\epsilon$ RI) Receptor Cluster Coalescence on Planar Ligand-Presenting Surfaces", August 2010.

- National Institute of Biomedical Imaging and Bioengineering 2010 Training Grantees Meeting, Bethesda, Maryland, "*Dynamics and Organization of Cell Surface Receptors: Experimental and Theoretical Studies*", June 2010.

### c. Conference/Meeting Posters

- 58<sup>th</sup> Annual Biophysical Society Meeting, "Magnetic Nanoparticle Delivery System for Mucus Layer Penetration", February 2014.
- Butcher Symposium, CU Boulder, "*Protein transport in curved plasma membranes and microvesicle-membrane fusion*", November 2013.
- BioFrontiers/NIST mini-symposium, CU Boulder, "*Real-time imaging of cell plasma membrane curvature*", July 2013.
- BioFrontiers/NIST mini-symposium, CU Boulder, "*Inhibition of Airway Mucus Production: a Magnetic Nanoparticle Approach*", July 2013.
- Annual UNM Pathology Department Research Day, " *Single-particle tracking of immunoglobulin E receptors (FcεRI) in micron-sized clusters and receptor patches*", May 2012.
- System Imaging Symposium, New Mexico Spatial Modeling Center, " *Single-particle tracking of immunoglobulin E receptors (FcεRI) in micron-sized clusters and receptor patches*", January 2012.
- Boulder Summer School for Condensed Matter and Material Physics, Hydrodynamics, "*Modeling the Coalescence Kinetics of Cell Surface Receptor Clusters*", July 2011.
- 20<sup>th</sup> Annual UNM Biology Department Research Day, "*Modeling the Coalescence Kinetics of Cell Surface Receptor Clusters*", April 2011.
- 55<sup>th</sup> Annual Biophysical Society Meeting, "*Modeling the Coalescence Kinetics of Cell Surface Receptor Clusters*", March 2011.
- National Institute of Biomedical Imaging and Bioengineering 2010 Training Grantees Meeting, Bethesda, Maryland, "*Dynamics and Organization of Cell Surface Receptors: Experimental and Theoretical Studies*", June 2010.
- 19<sup>th</sup> Annual UNM Biology Department Research Day, "*Distribution and dynamics of RBL IgE receptors (FcεRI) observed quantitatively on planar ligand-presenting surfaces*", April 2010.
- 54<sup>th</sup> Annual Biophysical Society Meeting, "*Distribution and dynamics of RBL IgE receptors (FcεRI) observed quantitatively on planar ligand-presenting surfaces*", February 2010.
- CINT User's Conference, "*Redistribution of Mast Cell IgE receptors in contact with Membrane-Bound Haptens*", September 2009.
- 53<sup>rd</sup> Annual Biophysical Society Meeting, "*Mobile Haptens in Lipid Bilayers Cause Large-Scale Clustering of IgE Receptors*", March 2009.
- 1<sup>st</sup> University of New Mexico Physics & Astronomy Research Retreat, "*Spatial Control of Spontaneous Fluorescence by Stimulated Emission*", November 2006.

### d. Invited Seminars

- University of Graz, Austria, Institute of Molecular Biosciences, Guest Lecture "A study of transmembrane protein dynamics and distribution in curved cell membranes", May 2014.
- UCCS BioFrontiers Seminar "*Real-time imaging of cell plasma membrane curvature*", May 2013.
- Optical Science and Engineering Seminar at UNM "*Real-time imaging of plasma membrane deformation with polarized excitation total internal reflection fluorescence microscopy*", April 2013.
- Lung Cell Biology Forum at National Jewish Health "*Dynamics and distribution of immunoglobulin E receptors upon binding mobile membrane ligands*", October 2012.
- UCCS BioFrontiers Seminar "*Dynamics and distribution of immunoglobulin E receptors upon binding mobile membrane ligands*", March 2012.
- UNM Computer Science Department, "*Dynamics and Organization of Cell Surface Receptors: Experimental and Theoretical Studies*", May 2010.

- Seminar in Interdisciplinary Biological and Biomedical Sciences "*Dynamics and Organization of Cell Surface Receptors: Experimental and Theoretical Studies*", February 2010.

### **Teaching**

- *UCCS, Fall 2014*: PES 9300 "Independent Study".
- *UCCS, Fall 2014*: PES 2130 "General Physics III - Calculus Based".
- *UCCS, Summer 2014*: PES 8000 "Dissertation".
- *UCCS, Spring 2014*: PES 1120 "General Physics II - Calculus Based".
- *UCCS, Spring 2014*: PES 8000 "Dissertation".
- *UCCS, Fall 2013*: PES 1110 "General Physics I - Calculus Based".
- *UCCS, Spring 2013*: PES 3950/PHYS 6950 "*Introduction to Biophysics*".
- *UNM, Spring 2011*: Physc 300, Bio 419/519, CS 591, Stat 479/579, Math 439/579, ECE 495/595, Anth 450/560: "*Algal Biofuels: A Multidisciplinary Approach*."

### **Grants and Fellowships:**

- Fellowship in Interdisciplinary Biological and Biomedical Sciences, August 2009- December 2011, *received ~\$50,000*.
- Program in Interdisciplinary Biological and Biomedical Sciences Student Enrichment Opportunities Grant, July 2011, *received \$900*.
- University of New Mexico Graduate Research Project and Travel Grant, March 2011, *received \$533*.
- Biophysical Student Travel Award, March 2011, *received \$400*.
- Program in Interdisciplinary Biological and Biomedical Sciences Student Enrichment Opportunities Grant, February 2010, *received \$500*.
- Center for Integrated Nanotechnologies Travel Award, September 2009, *received \$100*.
- Undergraduate athletic scholarship, August 2002- December 2006, *received \$22,500*.

### **Recognitions:**

- Departmental Honors of the Department of Physics and Astronomy at the University of New Mexico, Academic year 2006-2007
- Inductee of University of New Mexico Alumni Lettermen's Association Hall of Honor, September 2004
- NCAA Division I Ski Champion, March 2004

### **Professional Organizations**

- Biophysics Society Member, 2009 - present.
- American Physical Society Member, 2008 - present.
- American Physical Society 4 Corners Section Member, 2013 – present.