

Curriculum Vitae

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Education

1992 Ph.D. Physics City University of New York, NY
1989 M.A. Physics City University of New York, NY
1983 B.S. Math/Physics University of Regensburg, Germany

Employment

2010 - Associate Prof. Dept. of Physics, Univ. of South Florida, Tampa, FL
2004-10 Assistant Prof., Dept. of Physics, Univ. of South Florida, Tampa, FL
2000-04 Res. Asst. Prof., Dept. of Neuroscience, Univ. of Pennsylvania, Philadelphia, PA
1996-00 Postdoc. Fellow, Dept. of Neuroscience, Univ. of Pennsylvania, Philadelphia, PA
1995-96 Senior Res. Assoc., Center for Microgravity and Materials Research, Univ. of Alabama in Huntsville, Huntsville, AL
1993-95 Research Assoc., Center for Microgravity and Materials Research, Univ. of Alabama in Huntsville, Huntsville, AL

Professional Activities and Distinctions

- Chair, Biol. Sci. Symposium on Multi-scale Approach to Amyloid Diseases, Microscopy and Microanalysis Conference, Nashville, TN 2011
- Chair and Invited Speaker, Symposium on "From Protein Crystals to Amyloid Fibrils: Condensed Colloidal Phases in Biology", Biophys. Soc. Annual Meeting, Long Beach, California, Feb. 2008
- Seminars at TU München (2010), Cambridge University (2010), UMDNJ Piscataway (2010), Jawaharlal Nehru University (2009), Florida Atlantic University (2006), University of Syracuse (2004), NJ Institute of Technology (2004), Univ. of Pennsylvania (2000), Stevens Institute of Technology (1997), Rockefeller University (1996), University of Tohoku, Japan (1996), University of North Carolina (1995)
- Fellowship for 53rd annual meeting of the Society of General Physiologists, 1999
- Invited Presentation at Dutch Society for Endocrinology, Neurobiology and Psychology, Doorwerth, Holland, Jun. 2004; Internatl. Laser Light Scattering Symposium, Hong Kong, Oct 1996; Photon Correlation and Scattering Topical Meeting, Capri (Italy), Aug 1996.
- Reviewer for Neurosci Lett., Acta Cryst D, Appl. Mat. & Interf., Phys Rev E, J Am Chem Soc, J Cryst Growth, Cryst. Growth & Design, Opt Comm, Biophys. J., J. Neurosci. Eng.

- Membership in Professional Societies: American Physical Society (1989), Biophysical Society (1997), Society of General Physiologists (1999), Society of Neuroscience (2003), Society of Endocrinology (2009)

Publications (Peer Reviewed)

1. Daughdrill G.W. , S. Kashtanov, A. Stancik, S. E. Hill, G. Helms, M. Muschol, V. Receveur-Bréchet, F. M. Ytreberg (2012) Understanding the Structural Ensembles of a Highly Extended Disordered Protein, ***Mol. BioSyst.***, **8**:308-319.
2. Hill, S.E., T. Miti, T. Richmond and M. Muschol (2011) *Spatial Extent of Charge Repulsion Regulates Assembly Pathways for Lysozyme Amyloid Fibrils*, ***PLoS One***, **6**: e18171/1-12
3. Abisambra J., L. Blair, J. Jones, S. E. Hill, C. Kraft, J. Rogers, J. Koren, U. Jinwal, L. Lawson, A. Johnson, K. Jansen, M. Muschol, T. Golde, E. Weeber, J. Banko, and C. Dickey (2010) *Hsp27 prevents tau aggregation and rescues long term potentiation defects in tau transgenic mice*, ***J. Neurosci.*** , **30**:15374-15482
4. Foley J., H. Nguyen, C.B. Bennett and M. Muschol (2010) *Potassium Accumulation as Dynamic Modulator of Neurohypophysial Excitability*, ***Neurosci.***, **169**:65-73
5. Parmar, A.S. and M. Muschol (2009) *Lysozyme as Diffusion Tracer for Measuring Aqueous Solution Viscosity*, ***J. Colloid Interface Sci.*** **339**: 243:248
6. Parmar, A.S. and M. Muschol (2009) *Hydration and Hydrodynamic Interactions of Lysozyme: Effects of Chaotropic vs. Kosmotropic Ions*, ***Biophys. J.***, **97**: 590-598.
7. Bennett, C.B. and M. Muschol (2009) *Large Neurohypophysial Varicosities Amplify Action Potentials: Results from Numerical Simulations*, ***Endocrin.*** **150**: 2829 - 2836.
8. Hill, S.E., J. Robinson, G. Matthews and M. Muschol (2009) *Amyloid Protofibrils of Lysozyme Nucleate and Grow via Oligomer Fusion*, ***Biophys. J.***, **96**: 3781 - 3790
9. Jagannathan, R., A.S. Parmar, S. Adyanthaya, A. Prabhune, M. Muschol, and P. Poddar (2009) *In-situ Observation of Antibiotic Mediated Concurrent Growth of Two Distinct Homogeneous Populations of Gold Nanoparticles in Solution Phase*, ***J. Phys. Chem C.***, **113**: 3478 - 3486
10. Foley, J and M. Muschol (2008) *Action Spectra of Electrochromic Voltage-sensitive Dyes in an Intact Excitable Tissue*, ***J. Biomed. Opt.*** **13**: 064015:1 - 7
11. Parmar, A.S., P.E. Gottschall, M. Muschol (2007) *Pre-assembled Clusters Distort Crystal Nucleation Kinetics in Supersaturated Lysozyme Solutions*, ***Biophys. Chem.*** **129**: 224-234.
12. P. Kosterin, G.H. Kim, M. Muschol, A.L. Obaid, B.M. Salzberg. (2005) *Changes in FAD and NADP Fluorescence in Neurosecretory Terminals are Triggered by Calcium Entry and by ADP Production*, ***J. Membr. Biol.*** **208**: 113 - 124.
13. Salzberg, B.M., P.V. Kosterin, M. Muschol, A.L. Obaid, S.L. Romyantsev, Yu. Bilenko, and M.S. Shur (2005). *An Ultra-Stable Non-Coherent Light Source for Optical Measurements in Neuroscience and Cell Physiology*, ***J. Neurosci. Meth.*** **141**: 165 - 169.
14. Muschol, M., P. Kosterin, M. Ichikawa, and B.M Salzberg (2003). *Activity-Dependent Depression of Excitability and Calcium Transients in the Neurohypophysis Suggests a Model of "Stuttering Conduction"*, ***J. Neurosci.*** **23**: 11352 - 11362.

15. Muschol, M. and B.M Salzberg (2000). *Dependence of Transient and Residual Calcium Dynamics on Action-Potential Patterning during Neuropeptide Secretion*, **J. Neurosci.** **20**: 6773 - 6780.
16. Muschol, M. B.R. Dasgupta, and B.M Salzberg (1999). *Caffeine Interaction with Fluorescent Calcium Indicator Dyes*, **Biophys. J.** **77**: 577 - 586.
17. Muschol, M. and F. Rosenberger (1997). Liquid-liquid Phase Separation, Precipitate Formation and Crystallization in Supersaturated Lysozyme Solution, **J. Chem. Phys.** **107**: 1953 - 1962.
18. Rosenberger, F., P.G. Vekilov, M. Muschol, B.R. Thomas (1996). Nucleation and Crystallization of Globular Proteins - What Do We Know and What is Missing? **J. Cryst. Growth** **168**: 1 - 27.
19. Muschol, M. and F. Rosenberger (1996). *Lack of Evidence for Prenucleation Aggregate Formation in Lysozyme Crystal Growth Solution*, **J. Cryst. Growth** **167**: 738 - 747.
20. Muschol, M. and F. Rosenberger (1995). *Interactions in Under- and Supersaturated Lysozyme Solutions: Static and Dynamic Light Scattering Results*, **J. Chem. Phys.** **103**: 10424 - 10432.
21. Williams, L. M. Muschol, X.W. Qian, W. Losert, H.Z. Cummins (1993). *Dendritic Side-branching with Periodic Localized Perturbations: Directional Solidification of Pivalic Acid/Coumarin 152*, **Phys. Rev. E** **48**: 489 - 499.
22. Muschol, M., D. Liu, H.Z. Cummins (1992). *Surface Tension Anisotropy Measurements in Succinonitrile and Pivalic Acid: Comparison with Microscopic Solvability Theory*, **Phys. Rev. A** **46**: 1038 - 1050.
23. X.W. Qian, H. Chou, M. Muschol, H.Z. Cummins (1989). *Role of Noise in the Initial Stage of Solidification Instability*, **Phys. Rev. B** **39**: 2529 - 2531.

Book Chapters and Proceedings

1. B.M. Salzberg, M. Muschol and A.L. Obaid, Measuring Light-scattering Changes Associated with Secretion from Nerve Terminals in: ***Imaging in Neuroscience and Development: A Laboratory Manual*** ed. by R. Yuste and A. Konnerth (CSH Press, Cold Spring Harbor, N.Y. 2011).
2. B.M. Salzberg, M. Muschol and A.L. Obaid, *Rapid Changes in Light Scattering Associated with Secretion from Peptidergic Nerve Terminals*, in: ***Imaging, A Laboratory Manual*** ed. by A. Konnerth, R. Yuste, and F. Lanni (CSHL Press, Cold Spring Harbor, N.Y. 1999).
3. M. Muschol and F. Rosenberger, *Crystallization in protein solutions - what can we learn from light scattering*, Proc. AIAA Space Programs and Techn. Conference, Sept. 1995.
4. H.Z. Cummins, H. Chou, G. Livescu, O. Mesquita, M. Muschol, M.R. Srinivasan, *Dynamic light scattering at the non-equilibrium crystal-melt interface*, in ***Laser Optics of Condensed Matter*** , ed. by J.L. Birman, H.Z. Cummins and A.A. Kaplyanskii, (Plenum, New York 1988).