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EMPLOYMENT

Assistant Professor **08/18/2008-present**
Physics Department
Syracuse University, Syracuse, NY, USA

Faculty **08/18/2008-present**
Biomaterials Institute
Syracuse University, Syracuse, NY USA

Postdoctoral Researcher **08/01/2003-07/31/2008**
Department of Chemistry
University of California, Berkeley, CA, USA
Supervisor: Prof. Jay T. Groves

Graduate Research Assistant **08/01/2002-06/30/2003**
Institute for Experimental Physics I
University of Leipzig, Germany
Supervisor: Prof. Dr. Josef A. Käs
Work was conducted at the University of Texas at Austin under
co-supervision of Prof. Dr. Harry L. Swinney

Graduate Research Assistant **01/11/1999-07/31/2002**
University of Texas, Austin, TX, USA
Center of Nonlinear Dynamics
Supervisor: Josef A Käs

EDUCATION

Ph.D. Physics, Center for Nonlinear Dynamics **01/11/1999-05/17/2003**
University of Texas, Austin, TX, USA
Dissertation Title: "Motion of Nano-Objects in Langmuir Monolayers"
Thesis Advisors: Prof. Josef A. Käs, Prof. Harry L. Swinney

Diploma in Physics (German M.S. equivalent) **09/20/1992-11/30/1998**
University of Regensburg, Germany
Thesis Title: "Brownian and Anomalous Diffusion of Individual Amphiphilic Molecules in Langmuir Monolayers"
Thesis Advisor: Prof. Josef A. Käs

RESEARCH INTERESTS

Quantitative understanding of the dynamic interplay between spatio-temporal organization of bio-membranes and biochemical signaling using advanced biophotonic techniques.

TEACHING EXPERIENCE

Laboratory Section of Major Concepts of Physics II for Non Majors (PHY 102) **Spring 2009**

Physics Journal Workshop (PHY 250) **Spring 2009**

Substitute lectures in undergraduate and graduate level courses. **2004-present**
Subjects include Thermodynamics, Statistical Mechanics and Experimental Methods in Biophysics.

Teaching assistant for physics for engineering students. **2001**
Lead discussion sections that combined supplementary lectures and solving of example problems in collaboration with the students to assist their understanding of the course material. Designed homework and tests.

Teaching assistant for physics laboratory course. **1996**
Taught the relevant physical background for the specific experiments and supervised the students' laboratory work.

Supervision of undergraduate student research **2002-2003, 2004-2006**

FUNDING

Chancellor's Leadership Project, SU **2009**
"Transformative Alliance on Cellular Engineering (TrACE)", Co-PI

PROFESSIONAL SERVICE

Reviewer for the ACS journal "Langmuir" **2004-present**
Reviewer for "Journal of Colloid and Interface Science" **2007-present**
Reviewer for "Journal of Structural Biology" **2009-present**
Reviewer for "Biophysical Journal" **2009-present**

Co-organization of the conference on "Assembly and Self-Assembly at the Interface of Biology, Chemistry and Physics" in Il'Ciocco, Italy **2001**

PROFESSIONAL ASSOCIATIONS

Biophysical Society	1999-present
American Physical Society	2002-present
American Chemical Society	2005-present

PRESENTATIONS AND TALKS

- Forstner, M. B.**, Lillemeier, B.F., Davis, M. M. & Groves, J. T., “Activation Dependent Organization of T Cell Membranes”, *Talk*, American Physical Society March Meeting, Pittsburgh, PA, **2009**
- Forstner, M. B.**, Lillemeier, B.F., Davis, M. M. & Groves, J. T., “Activation Dependent Organization of T Cell Membranes”, *Talk*, 7th New York Complex Matter Workshop, Cornell University, NY, **2008**
- Forstner, M. B.**, Lillemeier, B.F., Davis, M. M. & Groves, J. T., “Different Lipid Anchors Recruit Proteins into Distinct Membrane Domains: A FCCS Study on Activated T-Cells.”, *Talk*, 234th American Chemical Society National Meeting, New Orleans, LA, **2008**
- Forstner, M. B.**, Lillemeier, B.F., Davis, M. M. & Groves, J. T., “Different Lipid Anchors Recruit Proteins into Distinct Membrane Domains: A FCCS Study on Activated T-Cells.”, *Talk*, 47th Annual Meeting of the American Biophysical Society, Long Beach, CA, **2008**
- Forstner, M. B.** & Groves, J. T., “Membrane Spatial Organization and Cellular Signal Transduction.”, *Talk*, Conference on Biological Membranes and Membrane Proteins: Challenges for Theory and Experiment, City Park, UT, **2007**
- Forstner, M. B.**, Yee, C. K., Parikh, A. N. & Groves, J. T., “Lipid Lateral Mobility and Membrane Phase Structure Modulation by Protein Binding.”, *Poster*, 232nd American Chemical Society National Meeting, San Francisco, CA, **2006**
- Forstner, M. B.**, Yee, C. K., Parikh, A. N. & Groves, J. T., “Sparse Protein Binding Alters Long-Range Lipid Mobility via Modulation of Phase Transition Behavior in Membranes.”, *Talk*, 45th Annual Meeting of the American Biophysical Society, Salt Lake City, UT, **2006**
- Forstner, M. B.**, Martin, D. S., Navar, A. M. & Käs, J. A., “Simultaneous Single-Particle Tracking and Visualization of Domain Structure on Lipid Monolayers.”, *Oral Presentation*, American Physical Society March Meeting, Austin, TX, **2003**
- Forstner, M. B.**, Martin, D. S. & Käs, J. A., “Single Lipid Diffusion in Spatially Inhomogeneous Monolayers.”, *Talk*, US-Japan Workshop, Complexity Science, Austin, TX, **2002**
- Forstner, M. B.**, Martin, D. S. & Käs, J. A., “Single Lipid Diffusion in Spatially Inhomogeneous Monolayers.”, *Talk*, 46th Annual Meeting of the American Biophysical Society, San Francisco, CA, **2002**
- Forstner, M. B.**, Martin, D. S. & Käs, J. A., “Anomalous Diffusion in a Single Lipid System? Minimal Requisites for Subdiffusion in Lipid Membranes.”, *Poster*, Conference on

Assembly and Self-Assembly at the Interface of Biology, Chemistry and Physics, Il Ciocco, Italy, **2001**

Forstner M. B., Martin D. S. & Käs J. A., “Anomalous Diffusion in a Single Lipid System? Minimal Requisites for Subdiffusion in Lipid Membranes.”, *Talk*, 45th Annual Meeting of the American Biophysical Society, Boston, MA, **2001**

Forstner, M. B., Martin, D. S. & Käs, J. A., “Anomalous Diffusion in a Single Lipid System? Minimal Requisites for Subdiffusion in Lipid Membranes.”, *Poster*, 40th Annual Meeting of American Society for Cell Biology, San Francisco, CA, **2000**

Forstner, M. B., Martin, D. S. & Käs, J. A., “Anomalous Diffusion in a Single Lipid System? Minimal Requisites for Subdiffusion in Lipid Membranes.”, *Talk*, 44th Annual Meeting of the American Biophysical Society, New Orleans, LA, **2000**

Forstner, M. B., Martin, D. S. & Käs, J. A., “Single Particle Tracking and the Observation of Anomalous Diffusion on Lipid Monolayers.”, *Talk*, 43rd Annual Meeting of the American Biophysical Society, Baltimore, MD, **1999**

PUBLICATIONS

Rozovsky, S.; **Forstner, M. B.**; Sondermann, H.; Groves, J. T., "Single Molecule Kinetics of ENTH Binding to Lipid Membranes." *in preparation*

Forstner, M. B.; Lillemeier, B. F.; Davis, M. M.; Groves, J. T., "Different Acylation Motifs Direct Multiple Orthogonal Co-Localization of Lipid-Anchored Proteins in Live Cell Membranes." *in preparation*

Lillemeier, B. F.; Moertelmaier, M. A.; **Forstner, M. B.**; Huppa, J. B.; Groves, J. T. & Davis, M. M., "TCR and LAT occur in separate domains on T cell membranes, which concatenate during activation.." *submitted*

Rabuka, D.; **Forstner, M. B.**; Groves, J. T. & Bertozzi, C. R., “Non-Covalent Cell Surface Engineering: Incorporation of Bioactive Synthetic Glycopolymers into Cellular Membranes.” *Journal of the American Chemical Society*, **2008**, 130, (18), 5947-5953.

Forstner, M. B.; Martin, D.; Ruckerl, F.; Käs, J. A. & Selle, C., “Attractive Membrane Domains Control Lateral Diffusion.” *Physical Review E*, **2008**, 77, 051906.

Groves, J. T.; Parthasarathy, R. & **Forstner, M. B.**, “Fluorescence Imaging of Membrane Dynamics.” *Annual Review of Biomedical Engineering*, **2008**, 10, 311-338.

Paulick, M. G.; **Forstner, M. B.**; Groves, J. T. & Bertozzi, C. R., “A Chemical Approach to Unraveling the Biological Function of the Glycosylphosphatidylinositol Anchor.” *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 129, (37), 11543-11550.

Paulick, M. G.; Wise, A. R.; **Forstner, M. B.**; Groves, J. T. & Bertozzi, C. R., “Synthetic Analogues of Glycosylphosphatidylinositol-Anchored Proteins and their Behavior in Supported Lipid Bilayers.” *Journal of the American Chemical Society*, **2007**, 129, (37), 11543-11550.

Forstner, M. B.; Yee, C. K.; Parikh, A. N. & Groves, J. T., “Lipid Lateral Mobility and Membrane Phase Structure Modulation by Protein Binding.” *Journal of the American Chemical Society*, **2006**, 128, (47), 15221-15227.

Selle, C.; Ruckerl, F.; Martin, D. S.; **Forstner, M. B.** & Käs, J. A., “Measurement of Diffusion in Langmuir Monolayers by Single-Particle Tracking.” *Physical Chemistry Chemical Physics* **2004**, 6, (24), 5535-5542.

Forstner, M. B.; Martin, D. S.; Navar, A. M. & Kas, J. A., “Simultaneous Single-Particle Tracking and Visualization of Domain Structure on Lipid Monolayers.” *Langmuir* **2003**, 19, (12), 4876-4879.

Martin, D. S.; **Forstner, M. B.** & Kas, J. A., “Apparent Subdiffusion Inherent to Single Particle Tracking.” *Biophysical Journal* **2002**, 83, (4), 2109-2117.

Forstner, M. B.; Kas, J. A. & Martin, D., “Single Lipid Diffusion in Langmuir Monolayers.” *Langmuir* **2001**, 17, (3), 567-570.