Jay T. Groves Biographical Sketch

Education
Tufts University, Medford, MA B.S. (*summa cum laude*) Physics & Chemistry 1992
Stanford University Ph.D. Biophysics 1998

Appointments
2010 – Professor, Dept. Chemistry, University of California, Berkeley CA
2008 – Overseas PI, Mechanobiology Institute, Singapore
2008 – 2015 Howard Hughes Medical Institute Investigator
2007 – 2010 Associate Professor, Dept. Chemistry, University of California, Berkeley, CA
2001 – Faculty Scientist, Lawrence Berkeley National Laboratory, Berkeley, CA
2001 – 2007 Assistant Professor, Dept. Chemistry, University of California, Berkeley, CA
1999 – 2001 Division Director's Fellow, Lawrence Berkeley National Laboratory, Berkeley, CA
1998 – 1999 Visiting Scholar, Academia Sinica, Taipei, Taiwan

Honors and Awards
University Lecture, Cornell University (2011)
Nature Biotechnology Award for Outstanding Research Achievement (2008)
LBNL Award for Excellence in Technology Transfer (2007)
ACS Langmuir Lecture Award (2005)
NSF CAREER Award (2005)
Beckman Young Investigator Award (2004)
Hellman Family Faculty Award (2004)
MIT TR100 (2003)
Searle Scholars Award (2002)
Burroughs Wellcome Career Award in the Biomedical Sciences (2000)
Merrill Lynch Innovation Grants Forum Entrepreneurship Award (1998)

Service
Chair elect 2020 and Vice Chair 2018, Biointerface Gordon Conference
Chair, Scientific Advisory Board, Chemistry Department, École Normale Supérieure, Paris France, 2013
Scientific Advisory Board, Lundbeck Center for Biomembranes in Nanomedicine, Copenhagen Denmark 2010
Associate Editor, Annual Review of Physical Chemistry, 2006 – 2015
Editorial Board, Current Opinion in Chemical Biology, 2006 –
Guest Editor, J. Struct. Biol., Special Issue on Supported Membranes, October 2009
Guest Editor, Materials Research Bulletin, Materials Science of Supported Lipid Membranes, July 2006
Co-Organizer, MRS Spring Meeting, Mechanotransduction and Engineered Cell-Surface Interactions Symposium, April 17 - 21, 2006, San Francisco, CA
Co-Organizer, QB3 Symposium on Cell Membrane Systems and Technology, May 2005
Guest Editor, Langmuir, Special Issue on the Biomolecular Interface, March 2004

Commercial Activities
2016 – Founder and Board of Directors, Ilytica, San Francisco, CA
2015 – Scientific Advisory Board, Warp Drive Inc., Cambridge MA
2015 – Scientific Advisory Board, zInstruments, Inc. Berkeley CA
2000 – 2008 Founder and Chairman of the Board of Directors, Synamem Corp., Burlingame CA

Patents (only issued and revenue-generating listed)
US 8,114,602 "Detection of molecular interactions" (Issued February 14, 2012)
US 6,699,719 "Biosensor arrays and methods" (Issued March 2, 2004)
US 6,228,326 "Arrays of independently-addressable supported fluid bilayer membranes and methods of use thereof" (Issued May 8, 2001)

Personal Statement

I have a broad background in physical chemistry and materials science as well as a long history of applying these skills to solve important problems in cell membrane biology and signal transduction. I invented the patterned supported membrane technology (***Science* 275:** 651 1997; ***Nature* 427:** 139 2004; ***Nature Meth.* 9:** 1189 2012; ***US Patent*** 6,228,326) as well as its integration with living cells to create *spatial mutations*, in which the geometrical arrangement of molecules inside otherwise chemically identical living cells is altered in a controlled ways (***Science* 310:** 1191 2005; ***Science* 327:** 1380 2010). Additionally, my research program has emphasized the advancement of optical tools including fluorescence spectroscopy, microscopy, and single molecule imaging to quantitatively analyze biological signaling processes on both reconstituted and living cell membranes (for recent examples see: ***Cell* 152:** 543 2013; ***eLife* 2:** e00778 2013; ***Science* 345:** 50 2014). My research group is correspondingly diverse with students and postdocs from physics, chemistry, biology and engineering all working as a team. I have served as PI or co-PI on extramurally funded programs from NIH, NSF, DOE, DOD, and NRF (Singapore) as well as a number of private foundations.

Contribution to Science

My early work focused on the physics of lipid membranes and I originally invented the patterned supported membrane as a tool for these studies (***Science* 275:** 651 1997; ***Nature* 427:** 139 2004; ***US Patent*** 6,228,326). This represents one of the early crossover technologies in which developments in the semiconductor industry were applied for use in biological systems. Supported membranes consist of a self-assembled proteolipid bilayer supported on a solid substrate such as silica. A thin (~2 nm) layer of water separates the membrane from the underlying substrate and enables lipids and membrane associated proteins to diffuse freely throughout the two-dimensional membrane surface. Solid-state nanostructures, fabricated onto the underlying substrate, can be used to restrict this molecular movement in precisely defined ways, thus offering a unique level of control over the dynamic and often unwieldy properties of membranes.

Precise physical control can be selectively transmitted to receptors on a live cell surface via specific interactions with their cognate ligands in the supported membrane, creating what we call a *spatial mutation*. This technology provided key insights helping to determine the role of spatial organization and the assembly of signaling clusters in T cell receptor antigen recognition (***Science* 310:** 1191 2005; ***PNAS* 22:** 9089 2011). The same strategy also enabled us to discover a previously unknown spatiomechanical signal regulatory coupling in ephrin-Eph receptor signaling whose misregulation plays a role in cancer (***Science* 327:** 1380 2010).

In more recent work, we have begun to use supported membrane systems to reconstitute complete signal transduction modules, such as activation of Ras, on membrane surfaces (***Science* 345:** 50 2014). In one example, we employ patterned membrane technology to isolate the catalytic activity of individual molecules of the Ras activating protein SOS. These experiments reveal SOS fluctuates between distinct, long-lived (>100s), functional catalytic states. Single molecule catalytic rates span almost 2 orders of magnitude. A key observation is that allosteric activation of SOS by Ras-GTP is conspicuously absent at the level of the ensemble average catalytic activity. Allosteric effects of Ras-GTP are evident, however, in the dynamics of fluctuations into highly active states. This physical property of SOS enables a mechanism of allosteric control in which functional output is determined by the spectrum of rates sampled by a small number of enzymes, rather than the ensemble average. Computer modeling confirms the viability of such a regulatory mechanism, which to my knowledge is the first such example found.

Publications (Google Scholar H-index = 51)

134. Biophys. J. 2016, *in press*: “Sustained α-catenin conformational activation at E-cadherin junctions in the absence of mechanical force”, Kabir H Biswas*, Kevin L Hartman, Ronen Zaidel-Bar*, Jay T. Groves*.
133. Nano Lett. 2016, *in press*: “Graphene-templated supported lipid membrane nanochannels”, Wan Li, Jean K. Chung, Young Kwang Lee, Jay T. Groves*.
132. Nat. Struct. Molec. Biol. 2016, *in press*: “One-way membrane trafficking of SOS in receptor-triggered Ras activation”, Sune M. Christensen, Hsiung-Lin Tu, Jesse Jun, Steven Alvarez, Meredith Triplet, Jeffrey S. Iwig, Kamlesh Yadav, Dafna Bar-Sagi, Jeroen P. Roose*, and Jay T. Groves*.
131. Langmuir 2016, *in press*: “A microbead supported membrane-based fluorescence imaging assay reveals intermembrane receptor−ligand complex dimension with nanometer precision”, Kabir H. Biswas* and Jay T. Groves*.
130. Proc. Natl. Acad. Sci. USA 2016, *in press*: “Phosphotyrosine-mediated LAT assembly on membranes drives kinetic bifurcation in the recruitment dynamics of the Ras activator SOS”, William Y. C. Huang, Qingrong Yan, Wan-Chen Lin, Jean K. Chung, Scott D. Hansen, Sune M. Christensen, Hsiung-Lin Tua, John Kuriyan, and Jay T. Groves*.
129. Nano Lett., 2016, 16, 2890-2895: “Monitoring the waiting time sequence of single Ras GTPase activation events using liposome functionalized zero-mode waveguides”, Sune M. Christensen, Meredith G. Triplet, Christopher Rhodes, Jeffrey S. Iwig, Hsiung-Lin Tu, Dimitrios Stamou, and Jay T. Groves*.
128. J. Am. Chem. Soc. 2016, 138, 1800-1803: “Covalent Ras dimerization on membrane surfaces through photosensitized oxidation”, Jean K. Chung, Young Kwang Lee, Hiu Yue Monatrice Lam, and Jay T. Groves*.
127. J. Phys. Chem B, 2016, 120, 867-876: “Dynamic organization of myristoylated Src in the live cell plasma membrane”, Adam W. Smith*, Hector H. Huang, Nicholas F. Endres, Christopher Rhodes, and Jay T. Groves*.
126. Biophys. J. 2016, 110, 176-187: “Cholesterol-enriched domain formation induced by viral-encoded, membrane-active amphipathic peptide”, Joshua M. Hanson, Douglas L. Gettel, Seyed R. Tabaei, Joshua Jackman, Min Chul Kim, Darryl Y. Sasaki, Jay T. Groves, Bo Liedberg, Nam-Joon Cho, and Atul N. Parikh*.
125. Mol. Biol. Cell 2015, 26(22), 4033-4045: “Diffusion of GPI-linked proteins is influenced by the activity of dynamic cortical actin”, Suvrajit Saha, Il-Hyung Lee, Anirban Polley, Jay T Groves, Madan Rao, Satyajit Mayor*.
124. Proc. Natl. Acad. Sci. USA 2015, 112(52), 15892-15897: “Negative membrane curvature catalyzes nucleation of endosomal sorting complex required for transport (ESCRT)-III assembly”, Il-Hyung Lee, Hiroyuki Kai, Lars-Anders Carlson, Jay T. Groves, and James H. Hurley*.
123. Proc. Natl. Acad. Sci. USA 2015, 112(35), 10932-10937: “E-cadherin junction formation involves an active kinetic nucleation process”, Kabir H. Biswas, Kevin L. Hartman, Cheng-han Yu, Oliver J. Harrison, Hang Song, Adam W. Smith, William Y. C. Huang, Wan-Chen Lin, Zhenhuan Guo, Anup Padmanabhan, Sergey M. Troyanovsky, Michael L. Dustin, Lawrence Shapiro, Barry Honig, Ronen Zaidel-Bar, and Jay T. Groves*.
122. eLife 2015, 4:e04052: “Importin-β modulates the permeability of the nuclear pore complex in a Ran-dependent manner”, Alan R Lowe, Jeffrey H Tang, Jaime Yassif, Michael Graf, William YC Huang, Jay T Groves, Karsten Weis*, Jan T Liphardt*.
121. J. Phys. Chem. B, 2015, 119(12), 4450-4459: "Live cell plasma membranes do not exhibit a miscibility phase transition over a wide range of temperatures", Il-Hyung Lee, Suvrajit Saha, Anirban Polley, Hector Huang, Satyajit Mayor*, Madan Rao*, and Jay T. Groves*.
120. Science, 2014 345, 50: “Ras activation by SOS: allosteric regulation by altered fluctuation dynamics”, Lars Iversen, Hsiung-Lin Tu, Wan-Chen Lin, Sune M. Christensen, Steven M. Abel, Jeff Iwig, Hung-Jen Wu, Jodi Gureasko, Christopher Rhodes, Rebecca S. Petit, Scott D. Hansen, Peter Thill, Cheng-Han Yu, Dimitrios Stamou, Arup K. Chakraborty, John Kuriyan, Jay T. Groves*.
119. Biophysical Journal 2014, 106, 2196-2205: “Spatial Organization of EphA2 at the Cell-Cell Interface Modulates Trans-Endocytosis of EphrinA1”, Adrienne C. Greene, Samuel J. Lord, Aiwei Tian, Christopher Rhodes, Hiroyuki Kai, and Jay T. Groves*.

118. Nano Lett. 2014, 14, 2293-2298: “Size-based chromatography of signaling clusters in a living cell membrane”, Niña G. Caculitan, Hiroyuki Kai, Eulanca Y. Liu, Nicole Fay, Yan Yu, Theobald Lohmüller, Geoff P. O’Donoghue, and Jay T. Groves*.
117. Proc. Natl. Acad. Sci USA 2014, 111(8), 2996-3001: “H-Ras forms dimers on membrane surfaces via a protein-protein interface”, Wan-Chen Lin, Lars Iversen, Hsiung-Lin Tu, Christopher Rhodes, Sune M. Christensen, Jeffrey S. Iwig, Scott D. Hansen, William Y. C. Huang, and Jay T. Groves*.
116. eLife 2014, 3: e01610, “Activation-triggered subunit exchange between CaMKII holoenzymes facilitates the spread of kinase activity”, Margaret M. Stratton, Il-Hyung Lee, Moitrayee Bhattacharyya, Sune M. Christensen, Luke H. Chao, Howard Schulman, Jay T. Groves*, and John Kuriyan*.
115. Biophysical Journal 2013, 105(3): L11-L13, “Ratiometric imaging of the T-cell actin cytoskeleton reveals the nature of receptor-induced cytoskeletal enrichment”, Alexander A. Smoligovets, Adam W. Smith, Jay T. Groves*.
114. eLife 2013 2: e00778, “Direct single molecule measurement of TCR triggering by agonist pMHC in living primary T cells”, Geoff P. O’Donoghue, Rafal M. Pielak, Alexander A. Smoligovets, Jenny J. Lin, Jay T. Groves*.
113. Nano Lett. 2013, 13: 3059-3064, “Nanoscale Obstacle Arrays Frustrate Transport of EphA2 – Ephrin-A1 Clusters in Cancer Cell Lines”, Theobald Lohmüller, Qian Xu, and Jay T. Groves*.
112. J. Cell Sci. 2013, 126, 1049-1058: “Modulation of T cell signaling by the actin cytoskeleton”, Yan Yu, Alexander A. Smoligovets, and Jay T. Groves*.
111. J. Am. Chem. Soc., 2013, 135: 5012-5016: "DNA-mediated assembly of protein heterodimers on membrane surfaces”, Michael P. Coyle, Qian Xu, Samantha Chiang, Matthew B. Francis*, Jay T. Groves*.
110. Nature Materials, 2013 12, 96–97: “Glycan’s Imprints”, Jay T. Groves*.
109. Cell, 2013, 152(3), 543-556: “Conformational coupling across the plasma membrane in activation of the EGF receptor”, Nicholas F. Endres[1], Rahul Das[1], Adam Smith[1], Anton Arkhipov, Erika Kovacs,Yongjian Huang, Jeffrey G. Pelton, Yibing Shan, David E. Shaw, David E. Wemmer, Jay T. Groves*, and John Kuriyan*.
108. Nature Methods, 2012, 9, 1189-1191: “Membrane-protein binding measured with solution-phase plasmonic nanocube sensors”, Hung-Jen Wu, Joel Henzie, Wan-Chen Lin, Christopher Rhodes, Zhu Li, Elodie Sartorel, Jeremy Thorner, Peidong Yang, Jay T. Groves*.
107. J. Am. Chem. Soc., 2012, 134(26), 10833-10842: "Monitoring Lipid-Anchor Organization in Cell Membranes by PIE-FCCS", Sara B. Triffo, Hector H Huang, Adam W Smith, Eldon T Chou, and Jay T Groves*.
106. J. Am. Chem. Soc., 2012, 134(23), 9549-9552: "Investigating cell surface galectin-mediated cross-linking on glycoengineered cells", Brian Belardi, Geoff P. O'Donoghue, Adam W. Smith, Jay T. Groves and Carolyn R. Bertozzi*.
105. J. Phys. Chem. B, 2012, 116(17), 5122-5131: "Single molecule kinetics of ENTH binding to lipid membranes.", Sharon Tozovsky, Martin B. Forstner, Holger Sondermann, Jay T. Groves*.
104. Annu. Rev. Biophys., 2012, 41, 543-56:"Receptor signaling clusters in the immune synapse.", Michael L. Dustin* and Jay T. Groves*.
103. J. Phys. Chem. B, 2012, 116(11), 3630-3640: "The membrane environment can promote or suppress bistability in cell signaling networks.", Steven M. Abel, Jeroen P. Roose, Jay T. Groves, Arthur Weiss, and Arup K. Chakraborty*.
102. Nano Lett., 2012, 12(3), 1717-1721: "Single molecule tracking on supported membranes with arrays of optical nanoantennas.", T. Lohmüller, L. Iversen, M. Schmidt, C. Rhodes, H.-L. Tu, W.-C. Lin, and J. T. Groves*.
101. J. Cell Sci., 2012, 125(3), 735-42: "Characterization of dynamic actin associations with T-cell receptor microclusters in primary T cells.", Alexander A. Smoligovets, Adam W. Smith, Hung-Jen Wu, Rebecca S. Petit, Jay T. Groves*.
100. PLoS ONE, 2012, 7(2), e30704: "Myosin IIA Modulates T Cell Receptor Transport and CasL Phosphorylation during Early Immunological Synapse Formation.", Yan Yu, Nicole C. Fay, Alexander A. Smoligovets, Hung-Jen Wu, Jay T. Groves*.
99. Biophys. J., 2011, 101(11), 2731-2739,"EphA2 Receptor Activation by Monomeric Ephrin-A1 on Supported Membranes.", Qian Xu, Wan-Chen Lin, Rebecca S. Petit, and Jay T. Groves*.

98. Nano Lett., 2011, 11(11), 4912-4918,"Supported Membranes Embedded with Fixed Arrays of Gold Nanoparticles.", Theobald Lohmüller, Sara Triffo, Geoff P. O'Donoghue, Qian Xu, Michael P. Coyle, and Jay T. Groves*.
97. Cell, 2011, 146(5), 732-745: "A Mechanism for Tunable Autoinhibition in the Structure of a Human Ca2+/Calmodulin- Dependent Kinase II Holoenzyme.", Luke H. Chao, Margaret M. Stratton, Il-Hyung Lee, Oren S. Rosenberg, Joshua Levitz, Daniel J. Mandell, Tanja Kortemme, Jay T. Groves, Howard Schulman and John Kuriyan*.
96. Curr. Opin. Cell Biol., 2011, 23(4), 370-376: "Signaling clusters in the cell membrane.", Niña C Hartman, Jay T Groves*.
95. Proc. Natl. Acad. Sci. USA, 2011, 108(22), 9089-9094: "T-cell triggering thresholds are modulated by the number of antigen within individual T-cell receptor clusters.", Boryana N. Manz, Bryan L. Jackson, Rebecca S. Petit, Michael L. Dustin and Jay Groves*.
94. Nat. Protoc., 2011, 6, 523-539: "Using patterned supported lipid membranes to investigate the role of receptor organization in intercellular signaling.", Pradeep M. Nair, Khalid Salaita, Rebecca S. Petit and Jay T. Groves*.
93. J. Phys. Chem. A, 2011, 115(16), 3867-3875: "Patterned Two-Photon Photoactivation Illuminates Spatial Reorganization in Live Cells.", Adam W. Smith, Alexander A. Smoligovets, and Jay T. Groves*.
92. Current Protocols in Chemical Biology, 2010, 2:235-269: "Supported Membrane Formation, Characterization, Functionalization, and Patterning for Application in Biological Science and Technology.", Wan-Chen Lin, Cheng-Han Yu, Sara Triffo, Jay T. Groves*.
91. Communicative & Integrative Biology, 2010, 3:5, 454-457: "Roles of the cytoskeleton in regulating EphA2 signals.", Khalid Salaita and Jay T. Groves*.
90. Proc. Natl. Acad. Sci. USA, 2010, 107(45): "Engineering of a synthetic electron conduit in living cells.", M. Jensen, Aaron E. Albers, Konstantin R. Malley, Yuri Y. Londer, Bruce E. Cohen, Brett A. Helms, Peter Weigele, Jay T. Groves, Caroline M. Ajo-Franklin*.
89. Med. Biol. Eng. Comput., 2010, 48(10): "Engineering supported membranes for cell biology.", Cheng-Han Yu, Jay T. Groves*.
88. New J. Phys., 2010, 12 095001: "Bending-mediated superstructural organizations in phase-separated lipid membranes.", Yoshihisa Kaizuka, Jay T. Groves*.
87. PLoS ONE, 2010, 5(7): "Altered Actin Centripetal Retrograde Flow in Physically Restricted Immunological Synapses.", Cheng-han Yu, Hung-Jen Wu, Yoshihisa Kaizuka, Ronald D. Vale, Jay T. Groves*.
86. Nat. Struct. Mol. Biol., 2010, 17, 659-665: "Molecular mechanisms in signal transduction at the membrane", Jay T. Groves* and John Kuriyan*.
85. Nat. Rev. Mol. Cell Biol., 2010, 11(5), 342-352: "Spatial organization and signal transduction at intercellular junctions", Boryana N. Manz and Jay T. Groves*.
84. Science 2010, 327, 1380-1385 “Restriction of receptor movement alters cellular response: Physical force sensing by EphA2”, Khalid Salaita, Pradeep M.Nair, Rebecca S. Petit, Richard M. Neve, Debopriya Das, Joe W. Gray, Jay T. Groves*.
83. Nat. Immunol. 2010 11(1), 90-96: “TCR and LAT occur in separate domains on T cell membranes, which concatenate during activation”, Björn F. Lillemeier, Manuel A. Mörtelmaier, Martin B. Forstner, Johannes B. Huppa, Jay T. Groves, Mark M. Davis*.
82. Nat. Chem. Biol. 2009, 5(11), 783-784: “Physical chemistry of membrane curvature”, Jay T. Groves.
81. J. Struct. Biol. 2009, 168, 1-2: “Supported membranes in structural biology”, Lukas K. Tamm* and Jay T. Groves*.
80. Proc. Natl. Acad. Sci. USA, 2009, 106, 31, 12729-12734: “Cluster size regulates protein sorting in the immunological synapse”, Niña C. Hartman, Jeffrey A. Nye, Jay T. Groves*.
79. Nano Lett, 2009, 5, 2077-2082: "A nanocube plasmonic sensor for molecular binding on membrane surfaces", William J. Galush, Sarah A. Shelby, Martin J. Mulvihill, Andrea Tao, Peidong Yang, Jay T. Groves*.
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77. Soft Matter,2009, 5, 1931-1936: "Like-charge interactions between colloidal particles are asymmetric with respect to sign", Esther W. Gomez, Nathan G. Clack, Hung-Jen Wu and Jay T. Groves*.

76. ChemPhysChem,2008, 9, 12, 1688-1692: "Discrete Arrays of Liquid Crystal-Supported Proteolipid Monolayers as Phantom Cell Surfaces", Amber R. Wise, Jeffrey A. Nye, Jay T. Groves*.
75. Nat. Biotech., 2008, 26, 7, 825-830: "Electrostatic readout of DNA microarrays with charged microspheres", Nathan G. Clack, Khalid Salaita and Jay T. Groves*.
74. Annu. Rev. Biomed. Eng., 2008, 10, 311-338: "Fluorescence Imaging of Membrane Dynamics", Jay T. Groves*, Raghuveer Parthasarathy, Martin B. Forstner.
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71. Langmuir, 2008, 24, 10, 6189-6193: "Electrical manipulation of supported lipid membranes by embedded electrodes", Bryan L. Jackson, Jeffrey A. Nye and Jay T. Groves*.
70. J. Am. Chem. Soc., 2008, 130, 18, 5947-5953: "Non-covalent cell surface engineering: incorporation of bioactive synthetic glycopolymers into cellular membranes", David Rabuka, Martin B. Forstner, Jay T. Groves and Carolyn R. Bertozzi*.
69. Langmuir, 2008, 24, 8, 4145 - 4149: "Kinetic control of histidine-tagged protein surface density on supported lipid bilayers", Jeffrey A. Nye and Jay T. Groves*.
68. Biophys. J. 2008, 94, 3286-3292: “T cell receptor microcluster transport through molecular mazes reveals mechanism of translocation”, Andrew L. DeMond, Kaspar D. Mossman, Toby Starr, Michael L. Dustin, and Jay T. Groves*.
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66. Proc. Natl. Acad. Sci. USA, 2007, 104, 51, 20332 - 20337: "A chemical approach to unraveling the biological function of the glycosylphosphatidylinositol anchor", Margot G. Paulick, Martin B. Forstner, Jay T. Groves and Carolyn R. Bertozzi*.
65. J. Phys. Chem. B 2007, 111, 12133-12135: "Molecular orientation of membrane-anchored mucin glycoprotein mimics", Raghuveer Parthasarathy, David Rabuka, Carolyn R. Bertozzi, and Jay T. Groves*.
64. J. Am. Chem. Soc. 2007, 129, 11543-11550: "Synthetic analogues of glycosylphosphatidylinositol anchored proteins and their behavior in supported lipid bilayers", Margot G. Paulick, Amber R. Wise, Martin B. Forstner, Jay T. Groves, and Carolyn R. Bertozzi*.
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62. J. Am. Chem. Soc. 2007, 129, 5462 - 5471: "Hierarchical assembly of model cell surfaces: Synthesis of mucin mimetic polymers and their display on supported bilayers", David Rabuka, Raghuveer Parthasarathy, Goo Soo Lee, Xing Chen, Jay T. Groves, and Carolyn R. Bertozzi*.
61. Nature Prot. 2007, 2, 1438 - 1444: "Detection of proteins using a colorimetric bio-barcode assay", Jwa-Min Nam, Kyung-Jin Jang, and Jay T. Groves*.
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59. Chem. Soc. Rev., 2007, 35, 46-54: “Micropatterned supported membranes as tools for quantitative studies of the immunological synapse”, Kaspar Mossman and Jay T. Groves.
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56. Biophys. J., 2006, 91, 3600-3606: “Analysis of shape, fluctuations, and dynamics in intermembrane junctions”, Lawrence C.-L. Lin, Jay T. Groves, and Frank L. H. Brown*.
55. Science, 2006, 313, 1901-1902: “Unveiling the membrane domains”, Jay T. Groves*.
54. J. Am. Chem. Soc., 2006, 128, 15221-15227: “Lipid lateral mobility and membrane phase structure modulation by protein binding”, Martin B. Forstner, Chanel K. Lee, Atul N. Parikh, and Jay T. Groves*.
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heterogeneities within single fluid supported phospholipids bilayer membranes", Annapoorna R. Sapuri-Butti, Qijian Li, Jay T. Groves, and Atul N. Parikh*.

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47. Anal. Chem. 2006, 78, 174-180: "Surface binding affinity measurements from order transitions of lipid membrane-coated colloidal particles", Esther M. Winter, and Jay T. Groves*.
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45. Science STKE 2005, 301, pe45: "Learning the chemical language of cell surface interactions", Jay T. Groves*.
44. Langmuir 2005, 21, 10693-10698: "Neuronal activation by GPI-linked neuroligin-1 displayed in synthetic lipid bilayer membranes", Michael M. Baksh, Camin Dean, Sophie Pautot, Shannon DeMaria, Ehud Isacoff, and Jay T. Groves*.
43. Nature Chem. Biol. 2005, 1, 283-289: "Neuronal synapse interaction reconstituted between live cells and supported lipid bilayers", Sophie Pautot, Hanson Lee, Ehud Y. Isacoff, and Jay T. Groves.
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