

Mark Alber

Publications:

Edited Special Issues of Journals and Books:

1. Special Issue of the Bulletin of Mathematical Biology, "Multi-scale Modeling of Tissue Growth and Shape", Mark Alber, Christophe Godin, Philip Maini, Roeland Merks, Eric Mjolsness, Editors (under preparation).
2. Mark Alber, Editor for the Section on Mathematical and Computational Methods in Biosciences and Medicine of the Encyclopedia of Applied and Computational Mathematics, *Springer*, 2016, 1676 p. In 2 volumes.
3. Special Issue of the Bulletin of Mathematical Biology, "Biomedical Modeling", M.Alber, P.Maini, G. Niebur, Editors, Volume 75, Issue 8, August 2013. ISSN: 0092-8240.
4. Special Issue on Applications to Biology of the Journal of Statistical Physics, Mark Alber, Ray Goldstein, Erwin Frey, Editors, *Springer*, Volume 128, Issue 1-2, July 2007.
5. Special Issue on Multiscale Modeling in Biology, SIAM Journal: Multiscale Modeling and Simulation, Mark Alber, Thomas Hou, James A. Glazier, Yi Jiang, Editors, *SIAM*, Volume 3, Number 2, 2005.
6. Special Issue of the Journal: Biofilms, Clay Fuqua, James A. Glazier, Yves Brun and Mark S. Alber, Editors, *Cambridge University Press*, Volume 1, Number 4, 2004.
7. Alber, M.S. , B. Hu and J. Rosenthal, Editors, Current and future directions in applied mathematics [1997]. Papers from the symposium held at the University of Notre Dame, Notre Dame, IN, April 1996. *Birkhouser Boston, Inc., Boston, MA* x+261.

Papers in Peer-reviewed Journals:

Mathematical and Computational Biology

8. Kim OV., Nevzorova TA., Mordakhanova ER., Ponomareva AA., Andrianova IA., Le Minh G., Daminova AG., Peshkova AD., Alber MS., Vagin O., Litvinov RI., Weisel JW., Fatal dysfunction and disintegration of thrombin-stimulated platelets. *Haematologica*. 2019 Feb 21. pii: haematol.2018.202309. doi: 10.3324/haematol.2018.202309. [Epub ahead of print]
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10. Banwarth-Kuhn M., Nematbakhsh A., Rodriguez KW., Snipes S., Rasmussen CG., Reddy GV., Alber M. [2018], Cell-Based Model of the Generation and Maintenance of the Shape and Structure of the Multilayered Shoot Apical Meristem of Arabidopsis thaliana. *Bull. Math. Biol.* 2018 Dec 14. doi: 10.1007/s11538-018-00547-z. [Epub ahead of print]

11. Shixin Xu, Zhiliang Xu, Oleg Kim, Rustem I. Litvinov, John W. Weisel and Mark Alber [2017], Model Predictions of Deformation, Embolization, and Permeability of Partially Obstructive Blood Clots under Variable Shear Flow, *Journal of the Royal Society Interface* 14: 20170441. <http://dx.doi.org/10.1098/rsif.2017.0441>
12. Oleg V. Kim, Rustem I. Litvinov, Mark S. Alber and John W. Weisel [2017], Quantitative Structural Mechanobiology of Platelet-Driven Blood Clot Contraction, *Nature Communications* 8: 1274. <https://www.nature.com/articles/s41467-017-00885-x.pdf> (authors for correspondence: J.W. Weisel and M. Alber).
13. Peter Höök, Rustem I. Litvinov, Oleg V. Kim, Shixin Xu, Zhiliang Xu, Joel S. Bennett, Mark S. Alber and John W. Weisel [2017], Strong Binding of Platelet Integrin $\alpha IIb\beta$ to Fibrin Clots: Potential Target to Destabilize Thrombi, *Scientific Reports* 7: 13001 (published by Nature) DOI:10.1038/s41598-017-12615-w
14. Y Klymenko, O Kim, E Loughran, J Yang, R Lombard, M Alber and MS Stack [2017], Cadherin composition and multicellular aggregate invasion in organotypic models of epithelial ovarian cancer intraperitoneal metastasis, *Oncogene* Oct 19;36(42):5840-5851. doi: 10.1038/onc.2017.171 (published by Springer Nature, authors for correspondence: M.S. Stack and M. Alber).
15. Peter Hook, Teresa Brito-Robinson, Oleg Kim, Cofy, Narciso, Holly V. Goodson, John W. Weisel, Mark S. Alber and Jeremiah J. Zartman, Whole Blood Clot Optical Clearing for Nondestructive 3D Imaging and Quatitative Analysis, *Biomedical Optics Express*, Volume 8, Issue 8, Page 3671. (authors for correspondence: J.Zartman, J.W. Weisel and M. Alber).
16. Ali Nematbakhsh, Wenzhao Sun, Pavel A. Brodskiy, Aboutaleb Amiri, Cody Narciso, Zhiliang Xu, Jeremiah J. Zartman, Mark Alber [2017], Multi-scale computational study of the mechanical regulation of cell mitotic rounding in epithelia, *PLoS Computational Biology*, 13(5): e1005533. <https://doi.org/10.1371/journal.pcbi.1005533>
17. Aranda R. Duan, Erin M. Jonasson, Emily O. Alberico, Chunlei Li, Jared P. Scripture, Rachel A. Miller, Mark S. Alber and Holly V. Goodson [2017], Interactions between Tau and different conformations of tubulin: Implications for Tau function and mechanism, *Journal of Molecular Biology* 429(9):1424-1438. doi: 10.1016/j.jmb.2017.03.018.
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