

Matthew E. Berginski  
Curriculum Vitae  
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Personal Information:

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Education:

2006-2013 Ph.D. in Biomedical Engineering with a Certificate in Bioinformatics and  
Computational Biology, University of North Carolina at Chapel Hill and North  
Carolina State University  
2002-2006 B.S. in Biomedical Engineering, Georgia Institute of Technology

Publications (\*indicates co-first-authorship):

See [Google Scholar](#) for Citation Information

1. Metz K, Deoudes EM, **Berginski ME**, Jimenez-Ruiz I, Aksoy BA, Hammerbacher J, Gomez SM, Phanstiel DH. *Cell Systems*, 2018 ([HTML](#)|[PDF](#)) Selected as cover for Cell Systems issue
2. LaCroix AS, Lynch AD, **Berginski ME**, Hoffman BD. Tunable molecular tension sensors reveal extension-based control of vinculin loading. *eLife*, 2018 ([HTML](#)|[PDF](#))
3. Creed SJ, Le CP, Hassan M, Pon CK, Albold S, Chan KT, **Berginski ME**, Huang Z, Bear JE, Lane JR, Halls ML, Ferrari D, Nowell CJ, Sloan EK.  $\beta$ 2-adrenoceptor signaling regulates invadopodia formation to enhance tumor cell invasion. *Breast Cancer Research*, 2015 ([HTML](#)|[PDF](#))
4. LaCroix AS, Rothenberg KE, **Berginski ME**, Urs AN, Hoffman BD. Construction, imaging, and analysis of FRET-based tension sensors in living cells. *Methods in Cell Biology*, 2015 ([HTML](#)|[PDF](#))
5. Chan KT, Asokan SB, King SJ, Bo T, Dubose ES, Liu W, **Berginski ME**, Simon JM, Davis IJ, Gomez SM, Sharpless NE, Bear JE. LKB1 loss in melanoma disrupts directional migration toward extracellular matrix cues. *JCB*, 2014 ([HTML](#)|[PDF](#))
6. Chu PH, Tsygankov D, **Berginski ME**, Dagliyan O, Gomez SM, Elston TC, Karginov AV, Hahn KM. Engineered kinase activation reveals unique morphodynamic phenotypes and associated trafficking for Src family isoforms. *PNAS*, 2014 ([HTML](#)|[PDF](#))
7. **Berginski ME**, Creed SJ, Cochran S, Roadcap DW, Bear JE, Gomez SM. Automated analysis of invadopodia dynamics in live cells. *PeerJ*, 2014 ([HTML](#)|[PDF](#)) Part of and Cover Image for PeerJ's Top Cancer Papers [Collection](#)
8. Karginov AV, Tsygankov D, **Berginski ME**, Chu P, Trudeau ED, Yi JJ, Gomez SM, Elston TC, Hahn KM. Dissecting motility signaling through activation of specific Src-effector complexes. *Nature Chemical Biology*, 2014 ([HTML](#)|[PDF](#))

9. Lin LK, Fulton LM, **Berginski ME**, West ML, Taylor NA, Moran TP, Coghill JM, Blazer BR, Bear JE, Serody JS. Intravital imaging of donor allogeneic effector and regulatory T cells with host dendritic cells during GvHD. *Blood*, 2014 ([HTML](#)|[PDF](#))
10. Vitriol EA, Wise AL, **Berginski ME**, Bamburg JR, and Zheng JQ. Instantaneous Inactivation of Cofilin1 Demonstrates Its Functions of Filament Severing and Depolymerization in Regulating F-actin Networks. *Molecular Biology of the Cell*, 2013 ([HTML](#)|[PDF](#))
11. **Berginski ME**, Gomez SM. The Focal Adhesion Analysis Server: a web tool for analyzing focal adhesion dynamics. *F1000Research*, 2013 ([HTML](#)|[PDF](#))
12. Sankar CP, Barhoumi R, **Berginski ME**, Sreenivasappa H, Tranche A, Gomez SM, Rivera GM. Nck enables directional cell migration through the coordination of polarized membrane protrusion with adhesion dynamics. *Journal of Cell Science*, 2013 ([HTML](#)|[PDF](#))
13. Chen Z, Lessey E, **Berginski ME**, Cao L, Li J, Trepap X, Itano M, Gomez SM, Kapustina M, Huang C, Burrige K, Truskey G, and Jacobson K. Gleevec, an abl family inhibitor, produces a profound change in cell shape and migration. *PLoS ONE*, 2013. ([HTML](#)|[PDF](#))
14. Wu C\*, Asokan SB\*, **Berginski ME**, Haynes EM, Sharpless NE, Griffith JD, Gomez SM, Bear JE. Arp2/3 Is Critical for Lamellipodia and Response to Extracellular Matrix Cues but Is Dispensable for Chemotaxis. *Cell*, 2012 ([HTML](#)|[PDF](#))
15. Shen K, Tolbert CE, Guilluy C, Swaminathan VS, **Berginski ME**, Burrige K, Superfine R, Campbell SL. The vinculin C-terminal hairpin mediates F-actin bundle formation, focal adhesion, and cell mechanical properties. *J Biol Chem*, 2011 ([HTML](#)|[PDF](#))
16. **Berginski ME\***, Vitriol EA\*, Hahn KM, Gomez SM. High-Resolution Quantification of Focal Adhesion Spatiotemporal Dynamics in Living Cells. *PLoS ONE*, 2011 ([HTML](#)|[PDF](#))

Presentations and Posters:

1. Introduction to the IDG-Kinases and the Dark Kinase Knowledge Base, Boston, MA, August 2018
2. Development of an Ezrin Tension Sensor to Measure Load Between the Membrane and the Actin Cytoskeleton, Triangle Cytoskeleton Conference, Saxapahaw, NC, September 2017
3. Design, Construction and Application of an Ezrin Tension Sensor, Triangle Cytoskeleton Meeting, Saxapahaw, NC. September 2016
4. Construction and use of an Ezrin tension sensor to measure actin-plasma membrane loading, Triangle Cytoskeleton Meeting, Saxapahaw, NC. September 2015
5. Comprehensive Spatiotemporal Analysis of Focal Adhesion Dynamics in Living Cells, BMES Meeting, Pittsburgh, PA. October 2009
6. Quantitative Analysis of Focal Adhesions in TIRF Microscopy Images, Bioengineering and Bioinformatics Summer Institute, Richmond, VA, Keynote Seminar. August 2009
7. Focal Adhesion Dynamics Analysis Through Quantitative Image Processing, RECOMB Systems Biology, Boston, MA. October 2008
8. Automatic Characterization of Focal Adhesions in TIRF Microscopy Images, Institute for Biological Engineering Conference, Chapel Hill, NC. March 2008, Received 3rd place in poster competition

Honors and Funding:

2016 NIH F32 Postdoctoral Fellowship (GM119294)  
2006-2009 NSF Graduate Research Fellowship  
2006-2008 North Carolina State Dean's Fellowship  
2002-2006 Graduated Summa Cum Laude from Georgia Institute of Technology

Other Experience:

2006-2013 Tutor with the Learning Center at the University of North Carolina at Chapel Hill  
2008-2009 Intern at the Office of Technology Development at the University of North Carolina at Chapel Hill  
2005-2006 Teaching Assistant in BMED 2300 at the Georgia Institute of Technology

Certifications:

2018 deeplearning.ai through Coursera

Open Source Software:

See <https://github.com/mbergins>