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. Joisa CU, Chen KA, **Berginski ME**, Golitz BT, Jenner MR, Herrera Loeza G, Yeh JJ, Gomez SM. Integrated single-dose kinome profiling data is predictive of cancer cell line sensitivity to kinase inhibitors, *PeerJ*, 2023 (HTML)
2. **Berginski ME***, Joisa CU*, Golitz BT, Gomez SM. Kinome Inhibition States and Multiomics Data Enable Prediction of Cell Viability in Diverse Cancer Types. *PLOS Computational Biology*, 2023 (HTML|PDF)
3. Chen KA, **Berginski ME**, Desai CS, Guillem JG, Stem J, Gomez SM, Kapadia MR. Differential Performance of Machine Learning Models in Prediction of Procedure-Specific Outcomes. *Journal of Gastrointestinal Surgery*, 2022 (HTML)
4. Boshen KE, Ptacek TS, **Berginski ME**, Simon JM, Parnell SE. Transcriptomic analyses of gastrulation-stage mouse embryos with differential susceptibility to alcohol. *Disease Models and Mechanisms*, 2021 (HTML) Selected as Editor's Choice for Issue
5. **Berginski ME**, Moret N, Liu C, Goldfarb D, Sorger PK, Gomez SM. The Dark Kinase Knowledgebase: an online compendium of knowledge and experimental results of understudied kinases. *Nucleic Acids Research*, 2021 (HTML|PDF)
6. Metz K, Deoudes EM, **Berginski ME**, Jimenez-Ruiz I, Aksoy BA, Hammerbacher J, Gomez SM, Phanstiel DH. Coral: Clear and Customizable Visualization of Human Kinome Data. *Cell Systems*, 2018 (HTML|PDF) Selected as cover for Cell Systems issue
7. LaCroix AS, Lynch AD, **Berginski ME**, Hoffman BD. Tunable molecular tension sensors reveal extension-based control of vinculin loading. *eLife*, 2018 (HTML|PDF)
8. 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. β2-adrenoceptor signaling regulates invadopodia formation to enhance tumor cell invasion. *Breast Cancer Research*, 2015 (HTML|PDF)

9. 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)

10. 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)

11. 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)

12. **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

13. Karginov AV, Tsygangov 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)

14. 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)

15. 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)

16. **Berginski ME**, Gomez SM. The Focal Adhesion Analysis Server: a web tool for analyzing focal adhesion dynamics. *F1000Research,* 2013 (HTML|PDF)

17. 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)

18. Chen Z, Lessey E, **Berginski ME**, Cao L, Li J, Trepat X, Itano M, Gomez SM, Kapustina M, Huang C, Burridge 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)

19. 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)

20. Shen K, Tolbert CE, Guilluy C, Swaminathan VS, **Berginski ME**, Burridge 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)

21. **Berginski ME***, Vitriol EA*, Hahn KM, Gomez SM. High-Resolution Quantification of Focal Adhesion Spatiotemporal Dynamics in Living Cells. *PLoS ONE,* 2011 (HTML|PDF)

Pre-Prints:

1. **Berginski ME***, Jenner MR*, Joisa CU, Herrera Loeza SG, Golitz BT, Lipner MB, Leary JR, Rashid NU, Johnson GL, Yeh JJ, Gomez SM. Kinome state is predictive of cell viability in pancreatic cancer tumor and stroma cell lines. *bioRxiv*, 2021 (HTML|PDF)

2. Moret N, Liu C, Gyori BM, Bachman JA, Steppi A, Taujale R, Huang LC, Hug C, **Berginski ME**, Gomez S, Kannan N, Sorger PK. Exploring the understudied human kinome for research and therapeutic opportunities. *bioRxiv*, 2020 (HTML|PDF)

<div align="center">Presentations and Posters:</div>

1. Kinotype to phenotype: Perturbed phosphoproteomic state predicts cancer cell growth rates in vitro. AACR Virtual Special Conference on Artificial Intelligence, Diagnosis, and Imaging, 2021
2. Introduction to the IDG-Kinases and the Dark Kinase Knowledge Base. Boston, MA, August 2018
3. Development of an Ezrin Tension Sensor to Measure Load Between the Membrane and the Actin Cytoskeleton. Triangle Cytoskeleton Conference, Saxapahaw, NC, September 2017
4. Design, Construction and Application of an Ezrin Tension Sensor. Triangle Cytoskeleton Meeting, Saxapahaw, NC. September 2016
5. Construction and use of an Ezrin tension sensor to measure actin-plasma membrane loading. Triangle Cytoskeleton Meeting, Saxapahaw, NC. September 2015
6. Comprehensive Spatiotemporal Analysis of Focal Adhesion Dynamics in Living Cells. BMES Meeting, Pittsburgh, PA. October 2009
7. Quantitative Analysis of Focal Adhesions in TIRF Microscopy Images. Bioengineering and Bioinformatics Summer Institute, Richmond, VA, Keynote Seminar. August 2009
8. Focal Adhesion Dynamics Analysis Through Quantitative Image Processing, RECOMB Systems Biology, Boston, MA. October 2008
9. 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

<div align="center">Honors and Funding:</div>

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

<div align="center">Service Work</div>

Peer review for PLOS One, PeerJ and Micron.

<div align="center">Other Experience:</div>

2018-2022	Instructor with the UNC Learn to Code Program
2021-2022	Analysis with the BARC core facility at UNC
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

<div align="center">Certifications:</div>

2018   deeplearning.ai through Coursera

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Open Source Software:

See https://github.com/mbergins

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