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Education

Ph.D.	Cell and Developmental Biology	University of North Carolina at Chapel Hill	2009
B.S.	Biology (with Honors)	University of North Carolina at Chapel Hill	2002

Research Positions

Assistant Professor Department of Anatomy and Cell Biology	University of Florida	2014-present
Postdoctoral Research Associate Mentor: James Zheng	Emory University	2009-2014
Graduate Student Mentors: Ken Jacobson and Klaus Hahn	University of North Carolina at Chapel Hill	2004-2009
Research Technician Supervisor: Kerry Bloom	University of North Carolina at Chapel Hill	2003-2004
Undergraduate Researcher Mentor: Kerry Bloom	University of North Carolina at Chapel Hill	2001-2002

Joint Appointments and Affiliations

University of Florida Center for Translational Research in Neurodegenerative Disease	Faculty
McKnight Brain Institute of the University of Florida	Member
UF Department of Neuroscience	Affiliate faculty

Honors and Awards

NIH Pathway to Independence Award (K99/R00)	2014-2018
Outstanding Postdoctoral Fellow Achievement Award, Emory University	2013
NIH Ruth L. Kirschstein NRSA for Individual Postdoctoral Fellows (F32)	2011-2013
Training in Translational Research in Neurology (NIH/T32) postdoctoral fellow, Emory University	2010-2011
NIH Ruth L. Kirschstein NRSA for Individual Predoctoral Fellows (F31)	2008-2009
Cell and Molecular Biology Training Program (NIH/T32) predoctoral fellow, UNC-CH	2005-2007
Graduated with Honors and Distinction, UNC-CH	2002

18. Skruber K, Warp PV, Shklyarov R, Thomas JD, Swanson MS, Henty-Ridilla JL, Read TA, **Vitriol EA**. (2020) Arp2/3 and Mena/VASP Require Profilin 1 for Actin Network Assembly at the Leading Edge. *Current Biology*, 30(14):2651-2664.

Highlighted in Actin Cytoskeleton: Profilin Gives Cells an Edge. *Current Biology*, 30(14): R807-R809.

17. Nutter CA, Bubenik JL, Oliveira R, Ivanković F, Sznajder LJ, Kidd BM, Pinto BS, Otero BA, Carter HA, **Vitriol EA**, Wang ET, Swanson MS. (2019) Cell-specific RNA Mis-splicing in Mouse Short Tandem Repeat Knockin Models of Myotonic Dystrophy Type 1. *Genes and Development* 33(23-24):1635-1640.
16. Osking Z, Ayers JI, Hildebrandt R, Skruber K, Eukovich AR, Brown H, Ryu D, Golde TE, Borchelt DR, Read TA, **Vitriol EA**. (2019) ALS-linked SOD1 Mutants Enhance Outgrowth and Branching in Adult Motor Neurons. *iScience* 11:294-304.
15. Skruber K, Read TA, **Vitriol EA** (2018) Reconsidering an Active Role for G-actin in Cytoskeletal Regulation. *Journal of Cell Science*, 131(1): jcs203760.
14. Li X, Mei Y, Yan B, **Vitriol E**, Huang S, Ji P, Qiu Y (2017) Histone Deacetylase 6 Regulates Cytokinesis and Erythrocyte Enucleation Through Deacetylation of Formin Protein mDia2. *Haematologica*, 102(6):984-994.
13. Kapustina M, Read TA, **Vitriol EA** (2016) Simultaneous Quantification of Actin Monomer and Filament Dynamics with Modelling Assisted Analysis of Photoactivation. *Journal of Cell Science*, 129(24):4633-4643.
12. **Vitriol EA***, McMillen LM, Kapustina M, Gomez SM, Vavylonis D, Zheng JQ (2015) Two Functionally Distinct Sources of G-actin Supply the Leading Edge of Lamellipodia. *Cell Reports*, 11(3): 433-445. ***Corresponding author**
11. Tsygankov D, Bilancia CG, **Vitriol EA**, Hahn KM, Peifer M, Elston TC (2014) CellGeo: A Computational Platform for the Analysis of Shape Changes in Cells with Complex Geometries. *Journal of Cell Biology*, 204(3): 443-460
10. **Vitriol EA**, Wise AL, Berginski ME, Bamburg JR, Zheng JQ (2013) Instantaneous Inactivation of Cofilin Reveals Its Function of F-actin Disassembly in Lamellipodia. *Molecular Biology of the Cell*, 24(14): 2238-47.

Cover article. Recommended by Faculty of 1000 (2★).

9. Lee CW*, **Vitriol EA***, Shim S, Wise AL, Velayutham RP, Zheng JQ (2013) Dynamic Localization of G-actin During Membrane Protrusion in Neuronal Motility. *Current Biology*, 23(12): 1046-56. ***Co-first author**
8. **Vitriol EA** and Zheng JQ (2012) Growth Cone Travel in Space and Time: The Cellular Ensemble of Cytoskeleton, Adhesion, and Membrane. *Neuron*, 73(6): 1068-1081.
7. Fan Y, Tang X, **Vitriol E**, Chen G, Zheng JQ (2011) Actin Capping Protein Is Required for Dendritic Spine Development and Synapse Formation. *Journal of Neuroscience*, 31(28): 10228-10233.
6. Berginski M*, **Vitriol EA***, Hahn KM, Gomez SM (2011) High-Resolution Quantification of Focal Adhesion Spatiotemporal Dynamics in Living Cells. *PLoS One*, 6(7): e22025. ***Co-first author**
5. Gulyani A*, **Vitriol E***, Allen R, Wu J, Gremyachinskiy D, Lewis S, Dewar B, Graves LM, Kay BK, Kuhlman B, Elston T, Hahn KM (2011) A Biosensor Generated via High-throughput Screening Quantifies Cell Edge Src Dynamics. *Nature Chemical Biology*, 7(7): 437-44. ***Co-first author**
4. Kapustina M, **Vitriol E**, Elston T, Loewe LM, Jacobson K (2010) Modeling Capping Protein FRAP and CALI Experiments Reveals *in vivo* Regulation of Actin Dynamics. *Cytoskeleton*, 67(8): 519-534.

3. Jacobson K, Rajfur Z, **Vitriol E**, Hahn KM (2008) Chromophore-Assisted Laser Inactivation in Cell Biology. *Trends in Cell Biology*, 18(9): 443-50.

Recommended by Faculty of 1000 (1★).

2. **Vitriol EA**, Uetrecht AC, Shen F, Jacobson K, Bear JE (2007) Enhanced Green Fluorescent Protein-Chromophore Assisted Laser Inactivation using Deficient Cells Rescued with Functional EGFP-Fusion Proteins. *Proceedings of the National Academy of Sciences*, 104(16): 6702-6707.

1. Lobachev K, **Vitriol E**, Stemple J, Resnick MA, Bloom K (2004) Chromosome Fragmentation after Induction of a Double-Strand Break Is an Active Process Prevented by the RMX Repair Complex. *Current Biology*, 14(23): 2107-2112.

Highlighted in DNA Repair: Keeping It Together. *Current Biology*, 14(23): R994-R996.

Invited Presentations

University of Florida, McKnight Brain Institute Zoom into Neuroscience	2020
University of Florida, Department of Biochemistry & Molecular Biology	2019
University of Florida, Center for Neurogenetics	2018
University of Florida, Department of Pharmacology & Therapeutics	2018
SUNY Upstate Medical University, Department of Cell and Developmental Biology	2018
University of Florida, Department of Physiological Sciences	2015
University of Florida, Department of Neuroscience	2015
Annual Meeting of the American Society for Cell Biology, Philadelphia	2014
University of Florida, Department of Anatomy and Cell Biology	2014
Institut Curie, France, Subcellular Structure and Cellular Dynamics Unit	2014
UNC-Chapel Hill, Department of Cell Biology and Physiology	2013
Emory University, Department of Cell Biology	2013
Annual Meeting of the American Society for Cell Biology, Washington D.C.	2007

Current Funding

R35 GM137959 (NIH/NIGMS) Vitriol (PI) 08/20/2020-07/31/2025

Deciphering the Mechanisms and Cellular Roles of Monomer-Driven Actin Dynamics

The major goal of this study is to determine how the actin monomer pool controls the assembly, organization, and dynamics of actin-based structures.

Previous Funding

ALS Association Starter Grant Vitriol (PI) 09/01/2018-08/31/2019

The Actin Cytoskeleton as a Novel Pathway in ALS Pathogenesis

The major goal of this study is to determine the mechanistic role of actin dysregulation in motor neuron toxicity and ALS disease progression.

R00 NS087104 (NIH/NINDS) Vitriol (PI) 04/01/2015-03/31/2018
Novel mechanisms of Actin Dynamics underlying Cell motility, Axon Growth, and ALS
The goal of this study is to determine the role that regulated polymerization of actin monomers plays in cell motility, motor neuron development, and ALS pathogenesis.

K99 NS087104 (NIH/NINDS) Vitriol (PI) 04/01/2014-12/01/2014
Novel mechanisms of Actin Dynamics underlying Cell motility, Axon Growth, and ALS
The goal of this study is to determine the role that regulated polymerization of actin monomers plays in cell motility, motor neuron development, and ALS pathogenesis.

F32 NS077612 (NIH/NINDS) Vitriol (PI) 12/01/2011-11/31/2013
Spatiotemporal Control of Cofilin Activity During Growth Cone Motility
The goal of this study is to use optogenetic control of cofilin to determine its role in regulating cell motility and growth cone guidance.

T32 NS007480 (NIH/NINDS) 09/01/2010-08/31/2011
Training in Translational Research in Neurology at Emory University
Postdoctoral trainee

F31 NS062487 (NIH/NINDS) Vitriol (PI) 02/15/2008-08/23/2009
Spatiotemporal Dynamics of RhoA Activation in Growth Cone Motility
The goal of this study is to determine how the small GTPase RhoA is spatiotemporally activated during growth cone motility and guidance.

T32GM008581 (NIH/NIGMS) 10/01/2005-03/31/2007
Cell and Molecular Biology Training Program at UNC-Chapel Hill
Graduate student trainee

Teaching Experience

University of Florida

Grant writing (GMS 6691) Course director	2020
Advanced Cell Biology (GMS 6421)	2020
Science for Life Research Course (BCH 4905)	2019
Grantsmanship (GMS 6691) Course director	2017
Molecular Cell Biology Journal Club (GMS 6690) Course director	2015-2017
Neurodegenerative Research: From Bench-to-Bedside (GMS 6029)	2016
Transcriptional and Translational Control of Cell Growth and Proliferation (GMS 6647)	2016
Fundamentals of Biomedical Science I (GMS 6001)	2015-2016

Emory University

Techniques in Neuroscience (NS 551)	2011-2013
Foundations in Biochemistry, Cell, and Developmental Biology (BCDB 502)	2012

University of North Carolina at Chapel Hill

Advanced Cell Biology I (CBIO 324), teaching assistant	2005-2007
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Graduate Student Trainees

Kristin Skruber	Molecular Cell Biology (PhD), University of Florida	2017-present
Zachary Osking, Ph.D.	Molecular Cell Biology (PhD), University of Florida	2017-2020

Undergraduate Trainees

Peyton Warp	BMS 4905 student, University of Florida	2019-present
Jasmine Encarnacion	BMS 4905 student, University of Florida	2020
Monica Khadka	BMS 4905 student, University of Florida	2019-2020
Austin Chen	BMS 4905 student, University of Florida	2018-2020
Rachael Shkylyarov	BMS 4905 student, University of Florida	2018-2019
Nida Imtiaz	Volunteer, University of Florida	2018
Amanda Eukovich	BMS 4905 student, University of Florida	2015-2017

Participation in Dissertation and Thesis Committees

Ghazaleh Behnammanesh	Pharmacology (PhD), University of Florida	2019-present
Yuxing Xia	Neuroscience (MD-PhD), University of Florida	2018-present
Elijah Newcomb	Biochemistry (PhD), University of Florida	2019-present
Joseph Lebowitz, Ph.D.	Neuroscience (PhD), University of Florida	2015-2019

Other Service to University of Florida

Interviewee for Science for Life Research Course (BCH 4905) students	2019
Review Panel member for The Thomas H. Maren Postdoctoral Award	2018
Co-director of the Molecular Cell Biology concentration of the BMS graduate program	2015-2017
Marshall for the Doctoral Degree Commencement Ceremony	2016
Judge for the International Student Award Competition	2016
Judge for the Medical Guild Advancement to Candidacy Award	2015-2016
Admissions Committee for the Graduate Program in Biomedical Sciences	2015-2016
Judge for the Medical Guild Graduate Student Research Competition	2015
Anatomy and Cell Biology Assistant Professor Faculty Search Committee	2015

Service to Scientific Community

Grant reviewer, French National Research Agency	2020
Grant reviewer, Wellcome Trust	2020
Faculty mentor, ASCB Doorstep Meeting "Florida Translational Cell Biology Symposium"	2017-2019
Ambassador, American Society for Cell Biology for the University of Florida	2017

Manuscript Reviewer

The Journal of General Physiology, The Journal of Mathematical Biology, Scientific Reports, International Review of Cell and Molecular Biology, Biophysical Reviews, The FASEB Journal, Advanced Science, Journal of Cell Science, Current Biology. *Ad hoc* reviewer for Science, Nature Cell Biology, Journal of Cell Biology, Neuron, Molecular Biology of the Cell.

Professional Memberships

Society for Neuroscience	2015-present
American Society for Cell Biology	2004-present