

# Elizabeth M. Haynes

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ehaynes2 at wisc.edu

## Education

<b>University of North Carolina at Chapel Hill</b> <i>Ph.D. in Cell and Developmental Biology</i>	<b>Chapel Hill, NC</b> August, 2015
<b>University of Central Florida</b> <i>Bachelor of Science in Molecular and Microbiology cum laude</i>	<b>Orlando, FL</b> May, 2010
<b>Lake-Sumter Community College</b> <i>Associate of Arts degree</i>	<b>Leesburg, FL</b> May, 2005

Awards & Fellowships	- 2018 Nikon Small World in Motion 1 <sup>st</sup> Place - Kirschstein-NRSA Post-Doctoral Fellowship, 2017-2020 - Michael Guyer Post-Doctoral Fellowship, 2016 - American Heart Association Pre-doctoral Fellowship, 2013-2015 - Department of Defense NCMR Research Scholarship, 2010 - American Cancer Society Research Fellowship, 2009 - Research and Mentoring Program Fellowship, 2008-2009 - Honors in the Major
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## Research

<b>Dr. Mary Halloran Lab</b> Post-Doctoral Fellow	<b>Madison, WI</b> Oct 2015–Present
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I use a variety of microscopy and gene editing techniques to investigate the role of KLCs in neuronal development, cargo transport and microtubule polarization *in vivo* in zebrafish.

*Methods: SPIM, swept-field confocal, CRISPR-Cas9 gene editing, microinjection, in-situ hybridization, genotyping, zebrafish husbandry, image analysis & automation*

<b>Laboratory of Optical and Computational Instrumentation</b> Post-Doctoral Fellow	<b>Madison, WI</b> Oct 2015–Present
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My role is to provide support for users on the swept field confocal microscope and assist in continuing development and optimization of its spectral imaging feature.

<b>Dr. James Bear Lab</b> PhD Student	<b>Chapel Hill, NC</b> May 2011–Sept 2015
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I used live cell imaging in combination with microfluidics and automated image analysis to determine the role of the actin debranching protein GMF in fibroblast directional migration.

*Methods: cell culture, cloning, PCR, live cell microscopy (confocal, TIRF, DIC, phase), microfluidics, immunostaining, image analysis, RNA-seq, qPCR, expansion microscopy*

<b>Dr. Kenneth Teter Lab</b> Student Researcher <i>Worked independently under supervision of Dr. Ken Teter</i>	<b>Orlando, FL</b> May 2007– July 2010
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I investigated the mechanism of the ribosomal inhibiting toxin saporin.

*Methods: cell culture, measurement of protein synthesis and cell metabolism, circular dichroism, surface plasmon resonance, FRET*

## Select Publications

Lee TJ, Lee JW, **Haynes EM**, Eliceiri KW, Halloran MC. 2017. *The Kinesin Adaptor Calsyntenin-1 Organizes Microtubule Polarity and Regulates Dynamics during Sensory Axon Arbor Development*. *Front Cell Neurosci*. v11:107.

King SJ, Asokan SB, **Haynes EM**, Zimmerman SP, Rotty JD, Alb JG. Jr., Blake D, Tagliatela A, Lebedeva IP, Marston D, Johnson HE, Parsons M, Sharpless NE, Kuhlman B, Haugh JM, Bear JE. 2016. *A Rac1/WAVE/Arp2/3 pathway directs haptotaxis via differential lamellipodia dynamics*. *Journal of Cell Science*. v129, 2329-42.

**Haynes EM**, Asokan SB, King SJ, Johnson HE, Haugh JM, Bear JE. 2015. *GMFβ controls branched actin content and lamellipodial retraction in fibroblasts*. *Journal of Cell Biology*. v209, 803-812.

Wu C, **Haynes EM**, Asokan SB, Simon JM, Sharpless NE, Baldwin AS, Davis IJ, Johnson GL, Bear JE. 2013 *Loss of Arp2/3 induces an NF-κB-dependent, nonautonomous effect on chemotactic signaling*. *Journal of Cell Biology*. v203, 907-916.

Wu C, Asokan SB, Berginski ME, **Haynes EM**, Sharpless NE, Griffith JD, Gomez SM, and Bear JE. 2012. *Arp2/3 Is Critical for Lamellipodia and Response to Extracellular Matrix Cues but Is Dispensable for Chemotaxis*. *Cell*. v148, 973–987.

## Select Presentations

International Zebrafish Conference, June 2018. Madison, WI  
Poster entitled “*Dissecting the specialized roles of Kinesin Light Chains in vivo*”

Cold Spring Harbor Axon Guidance Meeting, Septemeber 2016. Cold Spring Harbor, NY  
Poster entitled “*Imaging microtubule dynamics during axon growth and branching in vivo*”

UNC Chapel Hill Perl Memorial Lecture, January 2015. Chapel Hill, NC  
Talk entitled “*GMFβ controls branched actin content and lamellipodial retraction in fibroblasts*”

American Society for Cell Biology Conference, December 2014. Philidelphia, PA  
Talk entitled “*GMFβ controls branched actin content and lamellipodial retraction in fibroblasts*”

## Teaching & Mentorship

*Halloran Lab Undergraduate Student Mentees*

- Marcel Jean-Pierre
- Colin Guest (Hilldale Fellowship and Undergraduate Research Award)
- Yihong Li
- Yimeng Gu
- Conlin Bass (Hilldale Fellowship Award)

*Rotation Student Mentees*

- Korri Burnett (UW-Madison, Neuroscience Training Program)
- Ed Suarez-Zayas (UW-Madison, M.Sc. Neuroscience Training Program)
- Zach Swider (UW-Madison, Cell & Molecular Biology)
- Ani Michaud (UW-Madison, Cell & Molecular Biology)
- Alicia Tagliatela (UNC-Chapel Hill, Cell Biology & Physiology)
- Hailey Brighton (UNC-Chapel Hill, Cell Biology & Physiology)
- Chris Uyehara (UNC-Chapel Hill, Genetics & Molecular Biology)

Microscopy of Life, Light Sheet Microscopy Lecture, Fall 2019

- prepared and delivered a 45 minute lecture on light sheet microscopy and its uses in biology.

Scientific Leadership Postdoctoral Training Course, 2017

- participated in a 6 month course designed to train post-docs in the sciences management and leadership techniques and strategies.

TIBBS Summer Teaching Series Certificate, 2013

- attended a workshop series dedicated to current techniques in teaching (including active learning) and how to use them for science education.

UCF Honors Mentor 2010, 2011

- provide one-on-one mentorship via e-mail to UCF Honors students about research opportunities, scholarships, applying to graduate school, job opportunities, etc.

UCF Summer Research Academy Mentor 2009

- Taught freshman and sophomores about research at UCF and how to become an undergraduate researcher. Lectured on how to read primary literature, how to find a position in a lab, and good lab/research practices.

## **Service**

Departmental

2018 Integrative Biology Neuro Faculty Search Committee

Outreach

STEM Immersion Outreach Program, 2018, 2019

Wisconsin Science Festival, 2018

Amundsen High School Outreach Field Day, 2017, 2018

Emerson East Elementary Science Club, 2016