

R.C. Adikes

Rebecca Cressey Adikes
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Education

- PhD Department of Biology, Molecular Cellular and Developmental Biology Program, University North Carolina Chapel Hill, February 2017
- B.A. Mount Holyoke College, Major: Biochemistry GPA: 3.77, Magna cum laude, May 2011

Research Experience

Mechanisms of Cell Migration and Invasion (2018-Current)

Postdoctoral Associate/Postdoctoral Fellow Department of Biochemistry and Cell Biology, Stony Brook University
Advisors: Dr. Dave Matus, Dr. Ben Martin and Dr. Ryan Kerney

Molecular mechanisms of cell migration of mesodermal precursors during *C.elegans* and *D.rerio* development

Cellular mechanisms and role of algal (*Oophila amblystomatis*) migration and invasion in the spotted salamander (*Ambystoma maculatum*) embryo

Molecular Mechanisms of Cytoskeletal Form and Function (2012-2018)

Graduate Student, Department of Biology, University of North Carolina
Advisor: Dr. Kevin Slep

Development of a novel optogenetic system to study the effect of microtubule associated proteins on microtubule dynamics in a spatiotemporal manner

Investigating the role of the Drosophila XMAP215 family member, Mini spindles, at centrosomes and kinetochore microtubule plus ends during mitosis.

Microtubule Function and Cell Division (2011-2012)

Fulbright Researcher, Department of Cell and Developmental Biology, Center for Genomic Regulation, Barcelona, Spain
Advisors: Dr. Isabelle Vernos and Dr. Sylvain Meunier

Investigation of the role of motor proteins in non-centrosomal aster assembly

The Molecular Basis of Fatigue and Heart Failure (2010-2011)

Research Assistant, Department of Kinesiology, University of Massachusetts, Amherst, MA
Advisor: Dr. Edward Debold

Determining the effects of a cardiomyopathy causing mutation in TnT, a subunit of the muscle regulatory protein troponin, on the regulation of actomyosin motility

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Biochemical and Biophysical Characterization of Myosin-XIX (2008-2010)

Research Assistant, Department of Cellular and Molecular Physiology, Penn State College of Medicine, Hershey, PA

Advisors: Dr. Omar Quintero and Dr. Christopher Yengo

Biochemical analysis of the myosin-XIX motor domain

Research Assistant, Department of Biological Sciences, Mount Holyoke College, South Hadley, MA
Advisor: Dr. Omar Quintero

Determining the recovery kinetics of myosin-XIX on mitochondria using FRAP

HHMI Research Mentee, Department of Biological Sciences, Mount Holyoke College, South Hadley, MA and Department of Physics, University of Massachusetts, Amherst, MA
Advisors: Dr. Omar Quintero and Dr. Jennifer Ross

Purification of myosin-XIX

Teaching experience

Lecturer:

- Structural Biology and Spectroscopy, Stony Brook University, Spring 2020
- Developmental Genetics, Stony Brook University, Spring 2020

Lab Instructor:

- Developmental Genetics, Stony Brook University, Spring 2019 and 2020
- Cell Biology, Department of Biology, Mount Holyoke College, Spring 2011

Guest Lecturer:

- Cell Biology, Stony Brook University, Fall 2019
- Molecular Cytoskeleton, University of North Carolina, Fall 2014

Teaching Assistant:

- Microscopy Teaching Assistant: Embryology: Concepts and Techniques in Modern Developmental Biology. Marine Biological Laboratory, Woods Hole M.A. 2019
- Course Assistant/Research Facilitator: Analytical and Quantitative Light Microscopy Course, Woods Hole, MA, May 2014, 2018, 2019
- Cell and Developmental Biology, University of North Carolina, Fall 2013, Spring 2015

Peer Led Undergraduate Mentor:

Genetics/Molecular Biology and Cell Biology, Mount Holyoke College, 2009-2011

Research Mentor:

Matus Lab - Stony Brook University, Fall 2018-Current

MD/PhD Students Mentored:

Nuri Kim Spring 2018-Spring 2019 PhD Candidate Seliger Lab SBU

PhD Students Mentored:

Sam Stettinisch Summer 2020 – Current Graduate Student MCB
Courtney Tello Summer 2020 – Current Graduate Student Genetics
Maryam Azimi Fall 2019 – Current Graduate Student Genetics
Qinyun Zhao Fall 2019 – Current Graduate Student Applied Math

Undergraduates Mentored:

Anya Fang Fall 2019 – Current Clinical Lab Sciences Major
Ononah Ahmed Fall 2018 – Current Currently Postbac Researcher Matus Lab

Slep Lab - University of North Carolina, Spring 2013 – Spring 2018

Undergraduates Mentored:

Zeyun(Angela) Xue Fall 2016 - Spring 2018 Medical Student, UNC
Sofia Corella Fall 2017 - Spring 2018 MSTP Student, Case Western

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Claudia Szlek	Fall 2017 - Spring 2018	Biology Major, UNC
April Hamer	Fall 2013 - Spring 2017	Medical Analyst, Intouch Solutions
Brian Saway	Spring 2015 - Spring 2016	MD Virginia Tech, Resident, MUSC
Ashley Gwyn	Summer 2015-Summer 2016	PA Student, Wingate University
Tanner Fadero	Spring 2013-2015	PhD Candidate, UNC

Quintero Lab – Mount Holyoke College/Penn State Hershey, Summer 2009, 2010

Undergraduates Mentored:

Nellie Davis	Summer 2009	Entrepreneur, Nellie Rose Textile
Thoung Minh La	Summer 2010	Pfizer/Mass General Hospital

Traineeships

- Academics for Black Survival and Wellness. Organizers: Pearis L. Bellamy and Dr. Della V. Mosley. 2020
- SciPhD Training: Preparing scientists for professional careers. Instructors: Dr. Randall Ribaud and Larry Petcovic. 2020
- Junior Scientists Workshop on Biological Optical Microscopy. Janelia Research Campus, Ashburn, VA. Course Directors: Dr. Ilaria Testa, Dr. Kaspar Podgorski, Dr. Luke Lavis and Dr. Philipp Keller. 2019
- Grant Writers' Seminars and Workshops: NIH Grant Writing Workshop. Stony Brook University. 2019
- EMBO Practical Course: Light Sheet Microscopy. Max Plank Institute. Dresden, Germany. Course Directors: Dr. Pavel Tomancak, Dr. Jan Pechl, Dr. Emmanuel G. Reynaud. 2018
- Embryology: Concepts and Techniques in Modern Developmental Biology. Marine Biological Laboratory, Woods Hole M.A. Course Directors: Dr. Rich Schneider UCSF and Dr. David Sherwood Duke University. 2017
- NSF-Pan American Studies Institute training course on the function and regulation of the cytoskeleton. Rio de Janeiro, Brazil. Course Director: Dr. Margaret Titus, University of Minnesota. 2010

Consulting

- Rest Lab – confocal time lapse imaging of single celled marine eukaryotes
- Citovsky Lab – Confocal imaging of BiFC in tobacco plants
- Neiman Lab – Four color confocal imaging in mammalian cells
- iGEM Stony Brook experience for undergraduates – Guidance on imaging techniques and analysis

Publications

Adikes, R.C.*, Kohrman, A.Q.*, Martinez, M.A.Q.*, Palmisano, N.J., Smith, J.J., Medwig-Kinney, T.N., Min M., Sallee, M.D., Ahmed, O.B.^, Kim, N., Liu, S., Morabito, R.D., Weeks, N., Zhao, Q., Zhang, W., Feldman, J.L., Barkoulas, M., Pani, A.M., Spencer S.L., Martin, B.L., and Matus, D.Q. (2020). [Visualizing the metazoan proliferation-differentiation decision *in vivo*](#). bioRxiv
DOI: <https://doi.org/10.1101/2019.12.18.881888>

*these authors contributed equally

^undergraduate author

Bocanegra, J.L. *, **Adikes, R.C. ***, Quintero O.A. (2020) [Myosin XIX. Myosins - A Superfamily of Molecular Motors](#). Springer. *these authors contributed equally

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Adikes, R.C., Hallett, R.A., Saway, B.F.[^], Kuhlman, B., Slep, K.C. (2018) [Control of cytoskeletal dynamics via light mediated microtubule actin crosslinking](#). JCB 217(2) 779-793. DOI: 10.1083/jcb.201705190 Preprint on BioRxiv DOI: <https://doi.org/10.1101/142414>
[^]undergraduate author

Plevock, K.P.* , Fox, J.C.* , Byrnes, A.E.* , **Adikes, R.C.*** , Speed., S.K.[^], Haase, J., Freidman, B., Cook, D.M., Bloom, K., Rusan, N.M., Slep, K.C. (2018) [Stu2 uses a 15-nm parallel coiled coil for kinetochore localization and concomitant regulation of the mitotic spindle](#). MBoC. 29(3):285-294. DOI: 10.1091/mbc.E17-01-0057 *these authors contributed equally
[^]undergraduate author

Adikes, R.C., Unrath W.C., Yengo, C.M., and Quintero, O.A. (2013) [Biochemical analysis of the myosin-XIX motor domain](#). Cytoskeleton 70(5), 281-9. DOI: 10.1002/cm.2111

Quintero, O.A., DiVito, M.M., **Adikes, R.C.**, Kortan, M.B., Case, L.B., Lier, A.J., Panaretos, N.S., Slater S.Q., Rengarajan, M., Feliu M., Cheney R.E. (2009) [Human myo19 is a novel myosin that associates with mitochondria](#). *Current Biology* 19, 2008-2013. DOI: 10.1016/j.cub.2009.10.026

Presentations – Talks and Seminars

Adikes, R.C., (2020) *Visualizing the metazoan proliferation-differentiation decision in vivo*. Cell and Developmental Biology Virtual Meeting. Lab Roots and Imaris.

Adikes, R.C., (2020) *Visualizing the metazoan proliferation-differentiation decision in vivo*. TAGC. Virtual Meeting

Adikes, R.C., (2020) *Visualizing the metazoan proliferation-differentiation decision in C.elegans*. New York Area Worm Meeting. New York, NY.

Adikes, R.C., (2019) *Cell Migration and Invasion During Development*. Junior Scientists Workshop on Biological Optical Microscopy. Janelia Research Campus, Ashburn, VA.

Adikes, R.C., (2019) *Generating, implementing and analyzing ratiometric kinase-based biosensors in C. elegans*. International C. elegans Conference. Los Angeles, CA.

Adikes, R.C., (2019) *Cell cycle and cytoskeleton regulation of cell migration and differentiation of C. elegans sex myoblasts and zebrafish paraxial mesoderm*. North East Developmental Biology Meeting. Woods Hole, MA.

Adikes, R.C., (2017) *The TOG tales of the tail of XMAP215 family*. Triangle Cytoskeleton Meeting. Saxapahaw, NC.

Adikes, R.C., (2017) *Using blue light to change the dynamics of the cytoskeleton*. University of Richmond. Biology Department Seminar Series.

Adikes, R.C., (2017) *Illuminating the role of MT dynamics in space and time*. University of North Carolina. Biology Department Symposium.

Adikes, R.C., (2015) *Probing Msps polymerase activity during mitosis*. University of North Carolina Mitosis Club Meeting.

Adikes, R.C., (2010) *Myosin 19: a novel mitochondrial associated myosin*. Pan American Studies Institute on the function and regulation of the cytoskeleton. Búzios, Brazil.

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Grants

Current

- NIH NIGMS F32: Cytoskeletal and Cell Cycle Regulation of Cell Migration During Development

Previous Awarded

- NIH NRSA F31: Investigating the role of the Drosophila XMAP215 family member, Mini spindles, at centrosomes and kinetochore microtubule plus ends during mitosis.
- Edwin Grant Conklin Memorial Fund to attend the 2017 Embryology Course and Woods Hole, Summer 2017
- The Company of Biologists Ltd Scholarship to attend the 2017 Embryology Course and Woods Hole, Summer 2017
- L.I. Gilbert Travel Award to attend the Society for Developmental Biology 75th Annual Meeting
- ASCB Graduate Student Travel Award, 2015, 2017
- ASCB local meeting grant, 2014
- North Carolina Biotechnology Center: Biotechnology Event Sponsorship, 2014
- Fulbright Research Grant, September 2011- June 2012
- Ellen P. Resse Research Fund for undergraduate independent research, Summer 2010
- Feldman-Koster Fund for independent summer research, Summer 2009
- HHMI Cascade Mentoring Program Mount Holyoke College, Summer 2008

Honors

- National Science Foundation Graduate Research Program: Honorable Mention, 2014
- National Science Foundation Graduate Research Program: Honorable Mention, 2013
- Graduated *magna cum laude* from Mount Holyoke College, 2011
- Edna H Graham '41 Prize awarded to a chemistry or biochemistry major who shows promise of continued professional activity in her discipline, Mount Holyoke College, 2011
- Excellence in Teaching Award, Mount Holyoke College, 2011
- Barry M. Goldwater Scholarship and Excellence in Education: Honorable Mention for Excellence in Mathematics, Science and Engineering, 2010
- Bernice MacLean Awards for Excellence in the Biological Sciences, Mount Holyoke College, 2010
- NEWMAC Academic All-Conference Team, Mount Holyoke College, 2009, 2010, 2011

Service

- Co-Organizer: Society for Developmental Biology Satellite Symposium – Emerging Leaders in Live Cell Imaging Approaches for Developmental Biology, 2020
- Co-Founder and Public Relations Coordinator: Academic and Research-Intensive Career Cohort, 2016
- Co-Founder and Organizer: ASCB sponsored Triangle Cytoskeleton Meeting, September 2014
- Moorehead Science Ambassador, 2014
- Treasurer: Biology Graduate Student Association, 2014-2015
- Co-Chair: UNC Cytoskeleton and Migration Club, 2013-2017
- Founder and Teacher, Holyoke Middle School After School Science Program, 2010-2011
- Student Representative: Biology Graduate Student Association, 2013-2014
- DNA Day Science Fair Booth, UNC, Spring 2013
- Volunteer for Research Days, Center for Genomic Regulation, Fall 2011-Spring 2012
- Science Club Creator/Teacher: Connections Program at William Peck Middle School, Holyoke, MA, 2010-2011

Memberships in professional societies

- American Society for Cell Biology, 2008-present
- Biophysical Society, 2010-Present
- American Association for the Advancement of Science, 2016-2019
- Society for Developmental Biology, 2016-Present