

Joseph Marquardt  
Curriculum vitae

joseph.marquardt@wku.edu

## CURRENT POSITION

Assistant Professor, Department of Biology  
Western Kentucky University  
1906 College Heights Blvd., KTH3014  
Bowling Green, KY 42101

## POSITIONS AND EMPLOYMENT

**2022-present** Assistant Professor, Department of Biology, Western Kentucky University  
1906 College Heights Blvd., KTH3014 Bowling Green, KY 42101  
**2017-2022** *Postdoctoral Research Associate* in the laboratory of Dr. Erfei Bi at the  
University of Pennsylvania, Philadelphia, PA 19104  
**2011-2017** *Graduate Teaching Assistant* for the Department of Molecular Genetics at  
The Ohio State University, Columbus, OH 43210  
**2010-2017** *Graduate Research Assistant* in the laboratory of Dr. Harold Fisk at The  
Ohio State University, Columbus, OH 43210  
**2007-2010** *Undergraduate Research Assistant* in the laboratory of Dr. Jeffrey Marcus  
at Western Kentucky University, Bowling Green, KY 42101

## EDUCATION

**Ph.D.**, Molecular Genetics, The Ohio State University, May 2017

**B.S.**, Recombinant Gene Technology, Western Kentucky University, May 2010

## CURRENT RESEARCH INTERESTS

My primary training is in molecular biology, eukaryotic cell biology, and yeast genetics.  
Based on this formal training, my current research interests are as follows:

- Cell shape control mechanisms by the kinase Elm1 in the budding yeast *Saccharomyces cerevisiae*
- Dynamic localization of the scaffold Hsl7 during discrete cell cycle events
- Evolutionary relationship of Hsl7 for fungal pathogenesis

## PUBLICATIONS

\*Undergraduate student directly mentored by me.

#### **Prior to WKU**

- 2021 7. Marquardt, J.,** Chen,X., and Bi,E. (2021). Septin assembly and remodeling at the cell division site during the cell cycle. *Frontiers in Cell and Developmental Biology*, 9, 3358.
- 2020 6. Marquardt, J.,** Yao, L., Okada, H., and Bi, E. (2020). The LKB1-like Kinase Elm1 Controls Septin Hourglass Assembly and Stability by Regulating Filament Pairing. *Current Biology*, 30(12), 2386-2394.
- 2019 5. Marquardt, J.,** Chen, X., and Bi, E. (2019). Architecture, remodeling, and functions of the septin cytoskeleton. *Cytoskeleton (Hoboken)*, 76(1), 7-14.
- 2018 4. Marquardt, J.** and Marcus, J. (2018). Molecular tools for understanding landscape genetics and the population genetic effects of habitat restoration on butterflies. *Journal of the Lepidopterists' Society*, 72(4), 253-264.
- 2016 3. Marquardt, J.,** Perkins, J., Beuoy, K.\*, and Fisk, H. (2016). Modular elements of the tetratricopeptide repeats in the Mps1 amino-terminus target Mps1 to centrosomes and kinetochores. *PNAS*, 113(28), 7828-33.
- 2016 2. Marquardt, J.** and Fisk, H. (2016). ARHGEF17 Sets the timer for retention of Mps1 at kinetochores. *JCB*, 212(6), 615-616.
- 2012 1. Majumder, S.,** Slabodonick, M., Pike, A., **Marquardt, J.,** and Fisk, H. (2012). VDAC3 regulates centriole assembly by targeting Mps1 to centrosomes. *Cell Cycle*, 11(19), 3666-3678.

#### **AWARDS AND HONORS**

##### **WKU**

- 2022** CITL Teaching Honor nomination

##### **Prior to WKU**

- 2022** Best poster presentation award for the University of Pennsylvania Cell and Developmental Biology Department Retreat
- 2020** Regeneron Innovation Prize applicant chosen to represent the University of Pennsylvania
- 2014** American Society for Cell Biology Graduate Student Travel Award
- 2012** Graduate Teaching Assistant Award, Department of Molecular Genetics, The Ohio State University

#### **GRANTS AND FELLOWSHIPS**

##### **WKU**

- 2023** WKU Gatton academy Research Internship Supply Grant (RIG) for Nikhil Kumar, \$500 awarded for Summer 2023
- 2023** WKU RCAP for FY2024, \$16,000 applied
- 2023** KY INBRE EM voucher, \$5,000 applied for FY2023
- 2022** WKU Gatton academy Research Supply Grant (RSG) for Presley Neagle, \$500 awarded
- 2022** KY INBRE start-up grant, \$25,000 awarded for FY2023 (May 2023-April 2024), Western Kentucky University

#### **Prior to WKU**

- 2013** Pelotonia Graduate Student Research Fellowship, The Ohio State University, August 2013-December 2015
- 2009** Kentucky Academy of Science Undergraduate Research Grant, "*Molecular Tools for Understanding the Population Genetic Effects of Habitat Restoration on Butterflies*," Western Kentucky University, May 2009-May 2010
- 2009** Sigma Xi Undergraduate Research Grant, "*Molecular Tools for Understanding the Population Genetic Effects of Habitat Restoration on Butterflies*," Western Kentucky University, May 2009-May 2010

### **CONFERENCE PARTICIPATION**

#### **Prior to WKU**

##### **Poster Presentation**

- 2022** 3. "Crosstalk regulation between the septin-associated kinases Elm1 and Gin4," University of Pennsylvania Cell and Developmental Biology Department Retreat, May.
- 2019** 2. "Regulation of septin architecture and function by the LKB1-like kinase Elm1," American Society for Cell Biology Annual meeting, December 7-11.
- 2014** 1. "Localization determinants in the Mps1 amino terminus distinguish centrosomal and kinetochore targeting," American Society for Cell Biology Annual meeting, December 6-10.

### **INVITED SPEAKER**

#### **WKU**

- 2022** Invited speaker to discuss research at WKU and career pathway into academia with undergraduates of the Molecular Biotechnology major. Western Kentucky University, Biology 388, October 7.

#### **Prior to WKU**

- 2019** "Molecular Tools for Understanding the Population Genetic Effects of Habitat Restoration on Butterflies," The Academy of Natural Sciences at Drexel University lecture series, June 21.

**2018** “Regulation of septin architecture and function by the LKB1-like kinase Elm1,”  
University of Pennsylvania Cell and Developmental Biology Department Retreat,  
May 4.

## **SERVICE TO THE PROFESSION**

### **WKU**

#### **Department**

**2022-present** Biology retention committee

#### **University**

**2023** “Choose WKU” day, facilitated a tour of the biology labs in EBS (Feb 2023)

**2022** Presidential Scholarship “Meet your college” recruiting event (Oct 2022)

**2022** Invited speaker, Tri-Beta faculty series (Oct 2022)

**2022** Faculty reviewer for Faculty and Undergraduate Student Engagement (FUSE) grants

### **Prior to WKU**

#### **Invited Speaker Search Committee**

**2019** Distinguished Seminar Series- University of Pennsylvania Cell and Developmental Biology Department Postdoc Invited speaker series

**2014** 38<sup>th</sup> Annual Adolf E. Waller Memorial Lecture Series- Ohio State University Molecular Genetics

#### **Institutional Biological Safety Committee**

**2017** Swarthmore College- Served as the external reviewer for two NIH-funded grants that required IBC clearance to use biological samples in new research labs

## **STUDENT MENTORING**

<b>Undergraduate Students (Total:5)</b>			
<b>Name</b>	<b>Year</b>	<b>Type</b>	<b>Current Employment</b>
Callie Stempa	2022-	Biol 399	Undergraduate Student
Gabe Rogers	2022	Biol 399	Undergraduate Student
Jenson Harner	2022-	Volunteer	Undergraduate Student
Julia Allen	2022-	Volunteer	Undergraduate Student
Presley Neagle	2022-	Volunteer	Gatton Academy Student
Josiah Shackelford	2023-	Biol 399	Undergraduate Student
Cameron Seigle	2023-	Volunteer	Undergraduate Student

## TEACHING EXPERIENCE

### **Western Kentucky University, Assistant Professor**

Biol 120      Biological Concepts: Cells, Metabolism, and Genetics (SP2023)  
Biol 120H    Honors Biological Concepts: Cells, Metabolism, and Genetics (SP2023)  
Biol 319      Introduction to Cell and Molecular Biology (AU2022, SP2023)  
Biol 319H    Honors Introduction to Cell and Molecular Biology (AU2022, SP2023)

### **The Ohio State University, Graduate Teaching Assistant**

General Genetics (AU 2011, AU 2012, SU 2016, AU 2016)  
General Genetics Lab (SU 2016, AU 2016)  
Biological Sciences: Form, Function, Diversity, and Ecology (SP 2016, SP2017)  
Eukaryotic Cell and Developmental Biology Lab (SP 2012, SP 2013, SP 2015)  
Quantitative, Population, and Evolutionary Genetics (AU 2016)

## PREVIOUS RESEARCH EXPERIENCE

### **Western Kentucky University, Undergraduate Research Assistant**

Butterfly population genetics and molecular biology research in the lab of Jeffrey Marcus to elucidate the role of habitat corridor construction on local butterfly population structure. Relevant techniques used include field work collecting butterfly samples, genomic DNA isolation, molecular fingerprinting and sequencing, and phylogenetic tree generation and interpretation.

### **The Ohio State University, Graduate Research Assistant**

Mammalian cell culture and molecular biology research in the lab of Harold Fisk to elucidate the role of a protein kinase Mps1 in centrosome biology. Relevant techniques used include molecular cloning, protein purification, immunoprecipitation, SDS-PAGE and western blotting, mammalian cell culture, immunofluorescence, fluorescent fixed and live-cell microscopy.

### **The University of Pennsylvania, Postdoctoral Research Associate**

Yeast cell and molecular biology research in the lab of Dr. Erfei Bi to elucidate the structural composition and dynamics of septin architecture throughout the cell cycle. Relevant techniques include molecular cloning, protein purification, immunoprecipitation, SDS-PAGE and western blotting, yeast genetics, live-cell confocal microscopy, *in vivo* protein dynamics via fluorescence recovery after photobleaching (FRAP), photo-activation, and photo-conversion.

## PROFESSIONAL DEVELOPMENT

Year	Description of Activity	Type
2022	Syllabus training workshop offered by CITL	Teaching

2022	New faculty orientation	Teaching
2022	Blackboard Ultra Introduction (CITL)	Teaching
2022	KY INBRE R15 grant writing workshop	Scholarship
2022-	WKU President's Convocation	Other
2022-	Ogden College Opening Meeting	Other
2023	New faculty orientation (continuance and SITES)	Teaching