

JENNIFER R. KOWALSKI

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EDUCATION & TRAINING

Tufts University School of Medicine Boston, MA
TEACRS Postdoctoral Fellow 2006-2009

Harvard University Boston, MA
Ph.D. (Cell and Developmental Biology) 2006
Biological and Biomedical Sciences Program (Harvard Medical School)

University of Notre Dame Notre Dame, IN
B.S. (Biology), *Magna Cum Laude* 2000
2nd Major in Spanish

POSITIONS HELD

Associate Professor of Biological Sciences Spring 2015-present
Butler University, Indianapolis, IN

- BI460/NS460: Cell and Molecular Neurobiology
- SW275-BI: Mental Illness: Biological, Psychological, and Sociological Perspectives
- BI202/220: Cellular and Molecular Biology Fundamentals
- BI480: Biology Capstone - Stem Cell Biology
- BI411: Principles of Physiology

Assistant Professor of Biological Sciences Fall 2009-Spring 2015
Butler University, Indianapolis, IN

- BI120-123: Principles of Biology I & II, and Biological Investigations I & II
- BI202/220: Cellular and Molecular Biology Fundamentals
- BI303/411: Principles of Physiology
- BI408/460: Topics in Cellular and Molecular Neurobiology
- BI480: Biology Capstone - Nervous System Function & Dysfunction; Stem Cell Biology
- NW206-BI: Life, Death & Immortality: How the HeLa monster did and didn't change the world

Adjunct Professor of Biology Fall 2007- Spring 2008
Pine Manor College, Chestnut Hill, MA

- Bi490, Biology Major Senior Capstone (Molecular Cancer Biology)
- Bi101, Principles of Biology (guest lecturer)

Instructor, Bios95hfn: "Cell Migration in Physiology and Disease" Fall 2004-Spring 2006
Harvard University, Cambridge, MA

- Designed and taught a year-long, primary literature-based undergraduate seminar course

Teaching Assistant, Experimental Animal Development Lab Fall 1999
University of Notre Dame, Notre Dame, IN

- Prepared experimental materials, assisted students during laboratory sessions, graded lab quizzes.

RESEARCH EXPERIENCE

Butler University Indianapolis, IN
 Principal Investigator 2009-present
Research Focus: Molecular control of synaptic transmission by the ubiquitin signaling system in the nematode, *C. elegans*

Mount Desert Island Biological Laboratory Salisbury Cove, ME
 Visiting Scientist with Dustin Updike, Ph.D. September 2015
Research Focus: CRISPR-mediated genome editing of neuronal genes in the nematode, *C. elegans*

Tufts University School of Medicine Boston, MA
 Postdoctoral Associate with Peter Juo, Ph.D. 2006-2009
Postdoctoral Project: Regulation of glutamatergic synaptic signaling by a novel deubiquitinating enzyme in neurons of the nematode, *C. elegans*

Harvard University Boston, MA
 Graduate Student with Sheila M. Thomas, Ph.D. 2000-2006
Dissertation: Regulation of normal and malignant cellular processes by the cytoskeletal scaffold, cortactin

University of Notre Dame Notre Dame, IN
 Undergraduate Research with Douglas J. Fishkind, Ph.D. 1998-2000
Project: Mechanism of breast cancer cell invasion/motility following chemotactic stimuli

Baylor College of Medicine Houston, TX
 Undergraduate SMART Program Student with Susan M. Rosenberg, Ph.D. Summer 1999
Project: Role of adaptive amplification at the *lacZ* operon in *E. coli* as a stress response

University of Louisville, James G. Brown Cancer Center Louisville, KY
 Undergraduate Summer Student with James L. Wittliff, Ph.D., M.D. *hc* Summer 1998
Project: Effect of estrogen hormone mimics on DNA binding of the estrogen receptor

RESEARCH STUDENT MENTORING

<i>Butler University</i>	<i>Major/Career Path</i>	<i>Years in Lab</i>
Manpreet Kaur	Biology, Class of 2022	August 2019-present
<u>Project:</u> Generation of optogenetic <i>C. elegans</i> strains for investigation of FSHR-1 neuromuscular function.		

Molly Hicks	Biology, Class of 2021	June 2019-present
<u>Project:</u> Investigation of candidate FSHR-1 ligands that regulate neuromuscular signaling in <i>C. elegans</i> .		

Alyssa Ritter*^	Biology, Class of 2021	August 2018-present
<u>Project:</u> Investigation of cell-specific regulation of neuronal signaling by FSHR-1 under oxidative stress.		
<u>Presentations:</u> Indiana Academy of Science Meeting (March 2020-COVID-19 cancelled); Butler Undergraduate Research Conference (April 2020 COVID-19 cancelled);		

Torey Kazeck	Biology, Class of 2021	August 2018-August 2019
<u>Project:</u> Investigation of the role of the SUMO-conjugating enzyme UBC-9 in neuromuscular signaling.		

James Ewing	Biology, Class of 2021	August 2018-December 2018
<u>Project:</u> Investigation of candidate FSHR-1 ligands that regulate neuromuscular signaling in <i>C. elegans</i> .		

Lauryn Padgett (Biochemistry, '20)	Post-graduate studies, Butler	August 2018- present
<u>Project:</u> Investigation of FSHR-1 in regulating neuronal signaling under normal and oxidative stress.		

Ashley Crotteau (Biochemistry, '20)	Ph.D. student (Univ. of Notre Dame)	August 2018-May 2020
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Project: Investigation of SYD-2 Liprin α as a candidate substrate of the Anaphase promoting complex at the *C. elegans* neuromuscular junction.

Abby Shores* (Biology, '20)

November 2017-May 2020

Project: Investigation of FSHR-1 signaling pathways at the *C. elegans* neuromuscular junction.

Presentations: Indiana Academy of Science Meeting (March 2019; 2020-COVID-19 cancelled); Butler Undergraduate Research Conference (April 2019; 2020 COVID-19 cancelled); Butler Summer Institute (July 2019); Indianapolis Area *C. elegans* Meeting (July 2019); American Society for Cell Biology (Dec 2019)

Morgan Buckley*^ (Health Sciences, '20)

August 2017-May 2020

Project: Investigation of SYD-2 Liprin α as a candidate substrate of the Anaphase promoting complex at the *C. elegans* neuromuscular junction. **Presentations:** Indiana Academy of Science Meeting (March 2018, 2019; 2020-COVID-19 cancelled); Butler Undergraduate Research Conference (April 2018, 2019; 2020-COVID-19 cancelled); Indianapolis Area *C. elegans* Meeting (July 2018); Indiana Biocrossroads Life Sciences Summit (Oct 2018); Butler Summer Institute (July 2019); American Society for Cell Biology (Dec 2019). ****Awards:** **ASCB 2019 Undergraduate Poster Competition, 3rd Place**

Emily Nettesheim* (Health Sciences, '19) PA student (Butler University)

August 2017-May 2019

Project: CRISPR/Cas9-mediated investigation of FSHR-1 expression and function at the *C. elegans* neuromuscular junction. **Presentations:** Butler Summer Institute (July 2018); American Society for Cell Biology (Dec 2018)

David Ryskamp*^ (Biology/Chemistry, '19) Intern, Halda Therapeutics

August 2016-May 2019

Project: Investigation of FSHR-1 signaling pathways in regulating synaptic transmission at the *C. elegans* neuromuscular junction. **Presentations:** Indiana Academy of Science Meeting (March 2018, 2019); Butler University Undergraduate Research Conference (April 2018, 2019); Butler Summer Institute (July 2018); Indiana Biocrossroads Life Sciences Summit (Oct 2018); American Society for Cell Biology (Dec 2018)

Taylor Prechtel*^ (Biology, '19)

March 2016-May 2019

Project: Investigation of the active zone protein SYD-2 Liprin α as a candidate substrate of the Anaphase promoting complex at the *C. elegans* neuromuscular junction. **Presentations:** Butler Summer Institute (July 2017); UbiquitINDY Meeting (June 2017); Indianapolis Area *C. elegans* Meeting (July 2017, 2018), Indiana Academy of Science Meeting (March 2018, 2019); Butler Undergraduate Research Conference (April 2018, 2019); Indiana Biocrossroads Life Sciences Summit (Oct 2018); American Society for Cell Biology (Dec 2018)

Elly Mawi*^ (Biology/Psychology '19)

March 2016-December 2019

Project: Investigation of the role of the SUMO-conjugating enzyme UBC-9 in controlling neuromuscular signaling. **Presentations:** Butler Summer Institute (July 2017); UbiquitINDY Meeting (June 2017); Indianapolis Area *C. elegans* Meeting (July 2017); Indiana Academy of Science Meeting (March 2018, 2019); Butler Undergraduate Research Conference (April 2018, 2019); American Society for Cell Biology (Dec 2018)

Kennedy Harris (Business '19)

March 2016-May 2017

Project: Investigation of the neuronal functions of FSHR-1 at the *C. elegans* neuromuscular junction.

David Emch*^ (Biology/Chemistry '18)

Medical student (Indiana University)

January 2016-May 2018

Project: Investigation of FSHR-1 as a potential substrate of the Anaphase Promoting Complex at the *C. elegans* neuromuscular junction. **Presentations:** Butler Summer Institute (July 2016); Indiana Academy of Science (March 2017); UbiquitINDY Meeting (July 2016, June 2017); Indianapolis Area *C. elegans* Meeting (July 2017); Butler Undergraduate Research Conference (April 2017, 2018); American Society for Cell Biology (Dec 2017)

January 2016-December 2016

Kelsey McDougall*# (Biology '18)

M.P.H., Nutritional Sciences (U. of Michigan)

Project: Identification and characterization of regulators of the Anaphase Promoting Complex at the *C. elegans* neuromuscular junction. **Presentations:** BSI Summer Institute (July 2016); UbiquitINDY Meeting (July 2016); Butler Undergraduate Research Conference (April 2017)

Victoria Kreyden*^ (Biology '17)

Medical student (Indiana University) January 2014-July 2017

Project: Investigation of SUMO enzyme function in controlling synaptic transmission at the *C. elegans* Neuromuscular Junction. **Presentations:** American Society for Cell Biology (December 2016), BSI Summer Institute (July 2015), Butler Undergraduate Research Conference (April 2015, 2016, 2017), Indiana Academy of Science (March 2015, 2016, 2017), UbiquitINDY Meeting (July 2016), Indianapolis Area *C. elegans* Meeting (August 2016) ****Awards: ASCB 2016 Undergraduate Poster Competition First Prize.**

Lauryn Campagnoli#^% (Biology '16)

Ph.D. student (U. of Wisconsin) January 2015-July 2017

Project: Characterization of SYD-2 Liprin α as a substrate of the Anaphase Promoting Complex at the *C. elegans* neuromuscular junction. **Presentations:** American Society for Cell Biology (December 2016), Butler Undergraduate Research Conference (April 2016, 2017), Indiana Academy of Science (March 2016, 2017), Undergraduate Student Research Program Showcase (April 2016), UbiquitINDY Meeting (July 2016), Indianapolis Area *C. elegans* Meeting (August 2016); ****Awards: 2016 Barry S. Goldwater Honorable Mention.**

Amber Kline (Biology '16)

Ph.D. student (U. of North Carolina) August 2013-August 2016

Project #1: Development of cell type-specific knockdown of Anaphase Promoting Complex function at the *C. elegans* neuromuscular junction; **Project #2:** Investigation of the function of mammalian trisomy 21 gene Dyrk1A on neuromuscular signaling and the restorative effects of polyphenol EGCG in *C. elegans* **Presentations:** American Society for Cell Biology (December 2015), Butler Undergraduate Research Conference (April 2016). ***Awards:** Butler PUR student travel award (2015).

Allyson Munneke*^ (Biology '16)

Ph.D. student (U. of Michigan) August 2013-June 2016

Project: Investigation of the role of FSHR-1 in regulating synaptic transmission at the *C. elegans* neuromuscular junction. **Presentations:** BSI Summer Institute (July 2014), Butler Undergraduate Research Conference (April 2014, 2015, 2016), Indiana Academy of Science (March 2015, 2016), Indianapolis Area *C. elegans* Meeting (July 2015), American Society for Cell Biology (December 2015). ***Awards:** Butler PUR student travel award (2015).

Kyle Cherry^ (Biology '16)

Lancaster Laboratories

December 2012-August 2016

Project: Investigation of the relationship between the APC and its potential substrate, FSHR-1, in regulating synaptic transmission at the *C. elegans* neuromuscular junction. **Presentations:** Butler Undergraduate Research Conference (April 2014, 2015, 2016), Indiana Academy of Science (March 2015, 2016), Indianapolis Area *C. elegans* Meeting (July 2015), American Society for Cell Biology (December 2015). ***Awards:** Butler PUR student travel award (2015).

Sierra Williams (Biology '17)

February 2015-May 2016

Project: Investigation of the role of FSHR-1 in regulating synaptic transmission at the *C. elegans* neuromuscular junction. **Presentations:** Butler Undergraduate Research Conference (April 2016).

Brad Gerhardt

Biology, Class of 2018

January 2015-May 2015

Project: Investigation of the role of FSHR-1 in regulating synaptic transmission at the *C. elegans* neuromuscular junction.

Shataakshi Dube*^ (Biology '15)

Ph.D. student (Duke University)

January 2014-July 2015

Project: Optimization of the delivery of ester-masked fluorophores into *C. elegans* neuronal cells and quantification of fluorophore activity promoted by expression of cell-specific transgenic esterases.

Presentations: Butler Undergraduate Research Conference (April 2014, 2015), Indianapolis Area *C. elegans*

Meeting (August 2014), American Society for Cell Biology (December 2014), Indiana Academy of Science (March 2015)

Kyle Brumbaugh (Biology '16) Dr. Tavel Optical August 2014-December 2014
Project: Characterization of SYD-2 Liprin α as a substrate of the Anaphase Promoting Complex at the *C. elegans* neuromuscular junction.

Daniel Lester* (Biology, '15) Ph.D. student (Univ. of S. Florida) December 2012-May 2015
Project: Characterization of SYD-2 Liprin α as a substrate of the Anaphase Promoting Complex at the *C. elegans* neuromuscular junction. **Presentations:** BSI Summer Institute (July 2014), Butler Undergraduate Research Conference (April 2014, 2015), American Society for Cell Biology (December 2015), Indiana Academy of Science (March 2015)

Morgan Harrison (Biology, '15) Pharm.D. student (Butler Univ.) December 2012-October 2013
Project: Investigation of SUMO enzyme function in controlling synaptic transmission at the *C.elegans* Neuromuscular Junction

Nicole Green (Biology/Chemistry, '15) Roche Diagnostics August 2012-July 2013
Project: Optimization of the delivery of ester-masked fluorophores into *C.elegans* neuronal cells and quantification of fluorophore activity promoted by expression of cell-specific transgenic esterases for the identification of novel ubiquitin ligases involved in nervous system function. **Presentations:** American Chemical Society Annual Meeting (August 2013)

Mara Olson (Biology, '15) Medical student (UCSF) August 2012-May 2013
Project: Investigation of the role of FSHR-1 in regulating synaptic transmission at the *C. elegans* neuromuscular junction.

JoAnne Babula (Biology, '14) Ph.D. (Indiana U. Sch. of Med.) August 2013-August 2014
Project: Investigation of the function of mammalian trisomy 21 gene Dyrk1A on neuromuscular signaling and the restorative effects of polyphenol EGCG in *C. elegans*. **Presentations:** Butler Undergraduate Research Conference (April 2014)

Julie Kolnik*^# (Biology, '14) Medical student January 2012-May 2014
(Chicago College of Osteopathic Medicine)
M.S., Physiology (IUPUI, non-thesis)
Project: Investigation of the role of FSHR-1 in regulating synaptic transmission at the *C. elegans* neuromuscular junction. **Presentations:** BSI Summer Institute (July 2012), Butler Undergraduate Research Conference (April 2013, April 2014)

Rachael Essig*^ (Biology, '13) M.D. (West Virginia University) July 2011-May 2013
Project: Development of cell type-specific knockdown of Anaphase Promoting Complex function at the *C. elegans* neuromuscular junction. **Presentations:** Butler Summer Institute (July 2012), National Collegiate Honors Conference (November 2012), Butler Undergraduate Research Conference (April 2013).

Kristen Rush*^ (Biology, '13) M.D. (Indiana University) January 2011- May 2014
Project: Investigation of SUMO enzyme function in controlling synaptic transmission at the *C.elegans* Neuromuscular Junction. **Presentations:** Butler Summer Institute (July 2011), Indiana Academy of Sciences Meeting (March 2012), Butler Undergraduate Research Conference (April 2012, April 2013), Indianapolis Area *C. elegans* Meeting (November 2012)

Hitesh Dube*^ (Chemistry, '13) M.D. (Indiana University) January 2010 – May 2013
Project 1: Regulation of GABAergic synaptic transmission at the neuromuscular junction in *C. elegans* by the Anaphase Promoting Complex **Project 2:** Optimization of the delivery of ester-masked fluorophores into *C.elegans* neuronal cells and quantification of fluorophore activity promoted by expression of cell-specific transgenic esterases. **Presentations:** Butler Summer Institute (July 2010), Butler Biology Department Seminar (September 2010), Indianapolis Area *C. elegans* Meeting (September 2010), Butler Undergraduate

Research Conference (April 2011, April 2012, April 2013), American Society for Cell Biology (ASCB) Annual Meeting (December 2012). ****Awards: ASCB 2012 Undergraduate Poster Competition First Prize**

Amy Wasilk^{†*} (Biology, '13) Ph.D. (Purdue University) January 2010 – May 2013
Project: Investigation of the relationship between the APC and its potential substrate, FSHR-1, in regulating synaptic transmission at the *C. elegans* neuromuscular junction. **Presentations:** Butler Summer Institute (July 2011), Indianapolis Area *C. elegans* Meeting (February 2012), Butler Undergraduate Research Conference (April 2012, April 2013), American Society for Cell Biology (ASCB) Annual Meeting (December 2012)
****Awards:** Butler PUR student travel award (2012)

Zachary Didier (Biology '13) Dental school (U. Louisville) January– September 2012
Project: Regulation of GABAergic synaptic transmission at the neuromuscular junction in *C. elegans* by the Anaphase Promoting Complex.

Debra Goldsmith (Biology) B.S., Cytotechnology (IUPUI, '12) August 2010 – August 2011
Project: Development of cell type-specific knockdown of Anaphase Promoting Complex function at the *C. elegans* neuromuscular junction.

Andrew Banks (Biology '11) Medical student (U. of Louisville) August 2010 – May 2011
 M.A. Bioethics (U. of Louisville)
Project: Identification Anaphase Promoting Complex substrates at the *C. elegans* neuromuscular junction.

Logan Metzger (Biomedical Engineering '13) August 2010 – May 2011
Project: Identification of Anaphase Promoting Complex substrates at the *C. elegans* neuromuscular junction

Erica Damler* (Exercise Science '14) M.P.H., Epidemiology January 2010 – July 2010
 (George Washington University)
Project: “Investigation of FSHR-1 as a potential substrate of the Anaphase Promoting Complex in regulating synaptic transmission at the *C. elegans* neuromuscular junction” **Presentations:** Butler Summer Institute (July 2010), Butler Biology Department Seminar (September 2010), Indianapolis Area *C. elegans* Meeting (September 2010), Butler Undergraduate Research Conference (April 2011)

* Butler Summer Institute Award, † Butler Summer Brain Gain Participant, ^ Honors Thesis Student,
 # Butler Fairbanks Fellow (Undergraduate Student Research Program Award), % Goldwater Scholarship Honorable Mention

<i>Other Students</i>	<i>Institution</i>	<i>Career Path</i>
Nicole Ramsey	Harvard University SHURP Program (2005) (Howard University '07)	M.D./Ph.D., Weill Cornell/ Rockefeller/Sloan-Kettering
Bryan Graziano	Tufts University Summer Research Program (2008) (Gonzaga University '09)	D.D.S., Univ. of Colorado
Tina Jumani	Tufts University Biomedical Engineering student ('10)	Neonatology Fellow, Tufts Medical Center

RESEARCH GRANTS

External Awards

MRI grant, co-PI (2021-2024), \$426,055, National Science Foundation, “MRI: Acquisition of Spinning Disk Confocal for Multi-Disciplinary Research and Undergraduate Teaching and Training”. (w/ PI Lindsay Lewellyn, co-PIs Jeremy Johnson, Chris Stobart, Patience Masamha, and major users Mark Macbeth and Conrad Hong). **Pending: Re-submitted January 21, 2020.**

Senior Research Award (2017-2018), Indiana Academy of Sciences, \$2,500, “Investigation of neuromuscular signaling control by the SUMO conjugating enzyme, UBC-9”.

Visiting Scientist Fellowship (2015), Mount Desert Island Biological Laboratory. \$400 plus lab space and fees. “Generation of transgenics via CRISPR-Cas9 in *C. elegans*.”

Senior Research Award (2014-2015), Indiana Academy of Sciences, \$3,000, “Characterization of the neuronal functions of SUMO enzymes regulating neuromuscular signaling in *C. elegans*”.

R15 (AREA) award (2012-2017), \$372,869, National Institutes of Health, “Investigation of Anaphase Promoting Complex function in regulating synaptic transmission”.

TUES award, co-PI. (2012-2016) \$199,942, National Science Foundation, “An integrated series of student-driven, research-based undergraduate laboratory courses linking chemical biology, biochemistry, and neurobiology”.

Senior Research Award (2011-2012), Indiana Academy of Sciences, \$2,843, “Investigation of SUMO enzyme function in regulating synaptic transmission at the *C. elegans* neuromuscular junction”

Cottrell College Science Award (2010-2012), Research Corporation, \$35,000 “Identification and characterization of Anaphase Promoting Complex substrates that regulate synaptic transmission in *C. elegans*”

Training in Education and Critical Research Skills (TEACRS) Postdoctoral Fellowship (2006-2009), NIH/National Institute of General Medical Science (NIGMS), IRACDA program

Graduate Research Fellowship (2002-2005), National Science Foundation

Unfunded External Grant Applications

2020-2021 Indiana Academy of Science. \$2,850. “Investigation of substrate ubiquitination by the anaphase-promoting complex (APC) in *C. elegans* neuromuscular signaling” Submitted March 1, 2020.

R15 (AREA) grant (2019-2022), \$427,556, National Institutes of Health, “Investigation of the G protein-coupled receptor FSHR-1 in multi-tissue control of neuromuscular signaling in normal and oxidative stress conditions”. Submitted October 25, 2018. *Resubmission planned Summer/Fall 2020.*

NSF-RUI award (2018-2021), “Investigation of synaptic regulation by the anaphase promoting complex”, \$433,892/3 years, Submitted August 4, 2017.

R15 (AREA) award (2018-2021) “Investigation of Anaphase Promoting Complex function in synaptic transmission”, \$405,957/3 years, Submitted February 25, 2017.

Senior Research award (2016-2017): “Characterization of the role of the Down Syndrome-associated enzyme Dyrk1a in controlling neuromuscular signaling in *C. elegans*”, \$3,000, Submitted March 1, 2016.

Internal Awards

Faculty Research Grant (2019-2020), Holcomb Awards Committee, Butler University, \$13,972 “Regulation of neuromuscular function by FSHR-1 under normal and oxidative stress conditions”.

Faculty Research Grant (2018-2019), Holcomb Awards Committee, Butler University, \$13,172 “Characterization of candidate anaphase-promoting complex substrates important for neuromuscular signaling in *C. elegans*”.

Faculty Research Grant (2017-2018), Holcomb Awards Committee, Butler University, \$11,688 “Investigation of FSHR-1 function in controlling neuromuscular signaling in *C. elegans*”.

Faculty Research Grant (2016-2017), Holcomb Awards Committee, Butler University, \$9,322 “Characterization of the role of the SUMO conjugating enzyme UBC-9 in controlling the balance of excitatory to inhibitory synaptic signaling in *C. elegans*”.

Faculty Research Grant (2015-2016), Holcomb Awards Committee, Butler University, \$7,923 “Investigation of the role of the SUMO enzymes AOS-1 and UBC-9 in controlling the balance of excitatory and inhibitory neuronal signaling in *C. elegans*”.

Short Course Attendance Grant (2015), Holcomb Awards Committee, Butler University, \$752, Mount Desert Island Biological Laboratory Visiting Scientist Program.

Faculty Research Grant (2014-2015), Holcomb Awards Committee, Butler University, \$5,085
“Characterization of the neuronal functions of SUMO enzymes regulating neuromuscular signaling in *C. elegans*”.

Faculty Fellowship (2013-2014), Holcomb Awards Committee, Butler University, \$4,991, “Characterization of SUMO enzymes that regulate synaptic transmission at the *C. elegans* neuromuscular junction”.

Faculty Fellowship (2012-2013), Holcomb Awards Committee, Butler University, \$4,946, “Investigation of SUMO enzyme function in regulating synaptic transmission at the *C. elegans* neuromuscular junction”.

Faculty Research Grant (2011-2012), Holcomb Awards Committee, Butler University, \$3,090,
“Investigation of SUMO enzyme function in regulating synaptic transmission at the *C. elegans* neuromuscular junction”.

Faculty Research Grant (2010-2011), Holcomb Awards Committee, Butler University, \$15,000, “Analysis of Anaphase Promoting Complex function in regulating synaptic transmission at the *C. elegans* neuromuscular junction”

Travel to Present Grants (2010-2019), Holcomb Awards Committee, Butler University, \$1000/year.

EDUCATION GRANTS

Funded Awards

ASCB-COMPASS Outreach award, co-PI (2015), \$830. “Middle School Neurobiology Inquiry-based Lab Module” (co-investigator with Dr. Sarah Deffit, Indiana University)

Butler University Holcomb Awards Committee, Course Development Grant (2015), co-PI., \$1014, Mental Illness: Biological, Psychological, and Sociological Perspectives (with Dr. Tara Lineweaver and Dr. Kate Novak).

SENCER Post-Institute Implementation award (2010), NW course proposal with Angela Ockerman (COPHS): “Life, Death and Immortality: Henrietta Lacks and the HeLa revolution”. \$2,705 shared award (with other members of the Butler 2010 SENCER Team).

AWARDS AND HONORS

Tower Award for Women Leaders – Education Presentation Academy (Louisville, Kentucky)	2019
LAS Dean’s Award for Scholarship Butler University	2019
Special Recognition of Faculty Excellence Butler University	2018
Indiana Academy of Science Fellow Council of the Indiana Academy of Science	2018
“Apple for You Award” Butler University Student Government Association	2017
Spring 2016 Faculty Commencement Speaker Butler University Student Government Association	2016
“Apple for You Award” Butler University Student Government Association	2016

“Apple for You Award” Butler University Student Government Association (2 nominations)	2015
College of Liberal Arts and Sciences Awards Day Faculty Speaker Butler University Dean’s Invitation	2015
Outstanding Research Mentor Butler Summer Institute	2014
Outstanding Research Mentor Butler University Programs for Undergraduate Research (2 nominations)	2013
“Apple for You Award” Butler University Student Government Association (2 nominations)	2013
“Apple for You Award” Butler University Student Government Association (3 nominations)	2012
“Apple for You Award” Butler University Student Government Association	2010
Breast Cancer Research Poster Award 1 st Symposium of the Dana-Farber/Harvard Cancer Center Program in Breast Cancer	2004
Outstanding Senior Biological Scientist University of Notre Dame	2000
Undergraduate Research Day (Short Talk) Award University of Notre Dame	2000
Notre Dame Scholar University of Notre Dame	1996-2000

MANUSCRIPTS IN PREPARATION, SUBMISSION, or UNDER REVIEW

Kreyden, V.,* Mawi, E.*, Rush, K.M.*, **Kowalski, J.R.** UBC-9 Acts in GABA Neurons to Control Neuromuscular Signaling in *C. elegans*. (*In prep.* May/June 2020 submission).***Undergraduate co-author.**

Kowalski, J.R., Lineweaver, T., Novak, K.B. Developing Integrative Thinking in Undergraduate Students through an Interdisciplinary General Education Course on Mental Illness. (*Under review.* *J. College Teaching*, submitted March 2020).

PEER-REVIEWED PUBLICATIONS

Micropublication: Wei, B.^, **Kowalski, J.R.** (2018). *oxi-1* and *fshr-1* are required for neuromuscular signaling under normal and oxidative stress conditions in *C. elegans*. MICROPUBLICATION: BIOLOGY <https://doi.org/10.17912/PFYW-FT85>. ^**High school co-author.**

Dube, S.*, Dube, H.*, Green, N.B.*, Larsen, E.M., White, A.*, Johnson, R.J. and **Kowalski, J.R.** (2017). In Vivo Delivery and Activation of Masked Fluorogenic Hydrolase Substrates by Endogenous Hydrolases in *C. elegans*. *ChemBioChem*. doi:10.1002/cbic.201700278. ***Undergraduate co-author.**

Deffit, S.N., Neff, C., and **Kowalski, J.R.** (2017). Exploring *C. elegans* behavior: An inquiry-based laboratory module for middle or high school students. *Am Biol Teach*, 79:661-667.

Kowalski J.R., Hoops, G., and Johnson, R.J. (2016). Implementation of a Collaborative Series of Classroom-Based Undergraduate Research Experiences Spanning Chemical Biology, Biochemistry, and Neurobiology. *CBE Life Sci Educ*, 15: ar55. DOI:10.1187/cbe.16-02-0089.

Wang, J.[^], Jennings, A.K., and **Kowalski, J.R.** (2016). The Anaphase-Promoting Complex (APC) ubiquitin ligase affects chemosensory behavior in *C. elegans*. *PeerJ*, 4:e2013 <https://doi.org/10.7717/peerj.2013>.

[^]**High school co-author.**

Kowalski, J.R., Dube, H.*, Touroutine, D., Rush, K.M.*, Goodwin, P.R., Carozza, M., Didier, Z.*, Francis, M.M., and Juo, P. (2014). The Anaphase-Promoting Complex ubiquitin ligase regulates GABA transmission at the *C. elegans* neuromuscular junction. *Mol Cell Neurosci*, 58:62-75. ***Undergraduate co-author.**

Kowalski, J.R. and Juo, P. (2012). The role of deubiquitinating enzymes in synaptic function and nervous system diseases. *Neural Plasticity*, 2012: 13 pages. Article ID: 892749, doi:10.1155/2012/892749.

Review article.

Monteiro M.I., Ahlawat S., **Kowalski J.R.**, Malkin E., Koushika S.P., Juo P. (2012). The kinesin-3 family motor KLP-4 regulates anterograde trafficking of GLR-1 glutamate receptors in the ventral nerve cord of *Caenorhabditis elegans*. *Mol Biol Cell*, 23:3647-62.

Kowalski, J.R., Dahlberg, C.L., and Juo, P. (2011). The deubiquitinating enzyme USP-46 negatively regulates the degradation of glutamate receptors to control their abundance in the ventral nerve cord of *C. elegans*. *J. Neuroscience*, 31: 1341-1354.

Yang, L., **Kowalski, J.R.**, Yacono, P., Bajmoczy, M., Shaw, S.K., Froio, R.M., Golan, D.E., Thomas, S.M. and Lusciuskas, F.W. (2006). Endothelial cell cortactin coordinates ICAM-1 clustering and actin cytoskeleton remodeling during polymorphonuclear leukocyte adhesion and transmigration. *J. Immunology*, 177:6440-6449.

Yang, L., **Kowalski, J.R.**, Zhan, X., Thomas, S.M., and Lusciuskas, F.W. (2006). Endothelial cell cortactin phosphorylation by Src contributes to polymorphonuclear leukocyte transmigration in vitro. *Circ. Res.* 98:394-402.

Kowalski, J.R., Egile, C., Gil, S., Snapper, S.B., Li, R., and Thomas, S.M. (2005). Cortactin regulates cell migration via activation of N-WASP. *J. Cell Sci.* 118:79-87.

Hastings, P.J., Bull, H.J., **Klump, J.R.**, and Rosenberg, S.M. (2000) Adaptive amplification, an inducible chromosomal instability mechanism. *Cell* 103:723-731.

INVITED SEMINARS AND WORKSHOP PRESENTATIONS

Invited Teaching Demonstration, Butler University, College of Liberal Arts and Sciences. Butler Bound Recruitment Days - January and February, 2020. Teaching Demonstration title: "Building and Rebuilding the Brain: Exploring the Biology of Nervous System Development, Injury, and Repair."

Invited Seminar Speaker, Carleton College, Department of Biology, Northfield, MN, January 2020. Seminar title: "A Neuronal Balancing Act: FSHR-1 regulation of neuromuscular signaling in *C. elegans*".

Invited Workshop Co-Presenter, 2019 International *C. elegans* Meeting, Los Angeles, CA, June 2019. Workshop title: "Providing a Broader Research Experience by collaborating Across Independent CURE courses".

Invited Workshop Co-Presenter, 2017 IRACDA National Conference, Birmingham, AL, June 2017. Workshop title: "Creating Synergy by Integrating Interdisciplinary Research and Teaching (I²RT)".

Invited Seminar Speaker, Ball State University, Department of Biology, Muncie, IN, November 2015. Seminar title: "Regulation of Neuronal Signaling in *C. elegans* - a Molecular Balancing Act".

Invited Workshop Organizer and Presenter, Tufts University TEACRS Postdoctoral Program, Boston, MA, March 2014. Workshop title: “Training Tomorrow’s Scientists: A Workshop on Undergraduate Research Mentoring”. 5 hour workshop.

Invited Seminar Speaker, Indiana University, Medical Sciences Seminar, Bloomington, IN, January 2014. Seminar title: “Balancing signaling at the *C. elegans* NMJ: Regulation of inhibitory GABA transmission by the Anaphase-Promoting Complex ubiquitin ligase”.

Butler Undergraduate Research Conference Faculty Workshop: Incorporating undergraduate research into natural science laboratories. April 2014. Presentation title: “Integrating research and teaching through an inquiry-based *C. elegans* laboratory in cellular and molecular neurobiology”.

Invited Seminar Speaker, IUPUI Department of Biology, Indianapolis, IN, January 2013. Seminar title: “The Anaphase Promoting Complex controls GABAergic synaptic transmission at the *C. elegans* neuromuscular junction”.

Butler Undergraduate Research Conference: SENCER Faculty Workshop. April 2012. Ockerman, A. and **Kowalski, J.R.** Presentation title: “Life, Death, & Immortality... A basic science biology course about cell biology and introductory genetics”.

CONFERENCES AND WORKSHOPS ATTENDED

Research Conferences

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2020.
CANCELLED DUE TO COVID-19.

*Three of my undergraduate research students were scheduled to present (2 talks, 1 poster) at this meeting.

American Society for Cell Biology 59th Annual Meeting. San Diego, CA. December 2019.

- Buckley, M.*[^] and **Kowalski, J.R.** *Investigation of G protein-coupled receptor FSHR-1 in regulation of Active Zone Protein synaptic localization in C. elegans.* Poster.
- Shores, A.*[^], Ryskamp, D.*[^], Oloffson, S., Munneke, A.*[^], Godfrey, A.*[^], and **Kowalski, J. R.** *Examining the role of FSHR-1 and adenylyl cyclases in controlling neuromuscular signaling in Caenorhabditis elegans.* Poster.

* **Undergraduate co-authors, ^ Undergraduate presenter**

Twenty-second International C. elegans Meeting. Los Angeles, CA. June 2019.

- Olofsson, S., Munneke, A.*[^], Godfrey, A.*[^], Kolnik, J.*[^], Ryskamp, D.*[^], Buckley, M.*[^], Shores, A.*[^], Wei, B.*[^], and **Kowalski, J.R.** *FSHR-1 controls neuromuscular signaling balance in diverse physiologic conditions.* Poster.

* **Undergraduate co-authors, ^ High school co-author**

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2019.

- Mawi, E.*[^], Kreyden V.A.*[^], Rush K.M.*[^], Harrison, M.K.*[^], and **Kowalski, J.R.** *Localization and Functionality of the SUMO Conjugating Enzyme UBC-9 in C. elegans Neuromuscular Signaling.* Oral Presentation.
- Prechtel, T.*[^], Campagnoli, L.*[^], Lester, D.*[^], Rush, K.*[^], and **Kowalski, J.R.** *SYD-2 Liprin α is a candidate neuronal substrate of the anaphase-promoting complex in C. elegans.* Oral Presentation.
- Ryskamp, D.*[^], Olofsson, S., Godfrey, A.*[^], Williams, S.*[^], Shores, A.*[^], and **Kowalski, J.R.** *Cell type-specific investigation of the FSHR-1 receptor and its downstream pathway components in C. elegans neuromuscular signaling.* Oral Presentation.
- Buckley, M.*[^] and **Kowalski, J.R.** *Investigation of G protein-coupled receptor FSHR1 in regulation of UNC-10 RIM synaptic localization in C. elegans.* Poster.
- Shores, A.*[^] and **Kowalski, J. R.** *Examining the role of FSHR-1, PKA, and potential downstream components in controlling neuromuscular signaling at the NMJ in Caenorhabditis elegans.* Poster.

* **Undergraduate co-authors, ^ Undergraduate presenter**

American Society for Cell Biology 58th Annual Meeting. San Diego, CA. December 2018.

- Ryskamp, D.*[^], Olofsson, S., Godfrey, A.*, Shores, A.*, and **Kowalski, J.R.** Cell type-specific investigations of the FSHR-1 receptor and its downstream pathway components in neuromuscular signaling. Poster.
 - Mawi, E.*[^] Kreyden, V.A.*, Rush, K.M., Harrison, M.K.*, and **Kowalski, J.R.** *Localization and functionality of the SUMO conjugating enzyme UBC-9 in C. elegans neuromuscular signaling.* Poster.
 - Nettesheim, E.*, Cherry, K.*, Emch, D.*, and **Kowalski, J.R.** *Investigation of the neuronal expression pattern of the G protein-coupled receptor FSHR-1 in C. elegans.* Poster Presentation.
 - Prechtel, T.*[^], Campagnoli, L., Lester, D., Rush, K., Brumbaugh, K., and **Kowalski, J.R.** *SYD-2 Liprina is a candidate neuronal substrate of the Anaphase Promoting Complex in C. elegans.* Poster.
- *Undergraduate co-authors [^] Undergraduate presenter.

FASEB Ubiquitin & Cellular Regulation. Snowmass, CO. June 2018.

- Rush, K.M.*, Campagnoli, L.*, Lester, D.K.*, Godfrey, A.E.*, Munneke, A.M.*, Damler, E.*, Emch, D.*, and **Kowalski, J.R.** *Characterization of Anaphase-Promoting Complex Substrates at the C. elegans Neuromuscular Junction.* Poster. *Undergraduate co-authors

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2018.

- Emch, D.*[^], Cherry, K.*, Munneke, A.*, Godfrey, A.*, Damler, E.*, and Kowalski, J.R.. *Investigation of the FSHR-1 Receptor as a Potential Substrate of the Anaphase-Promoting Complex at the C. elegans Neuromuscular Junction.* Poster.
- Mawi, E.*[^] and **Kowalski, J.R.** *Investigation of the SUMO conjugating enzyme UBC-9 in controlling neuromuscular signaling in C. elegans.* Poster.
- Prechtel, T.*[^] and **Kowalski, J.R.** *Investigation of SYD-2 Liprina as a neuronal substrate of the Anaphase Promoting Complex enzyme in C. elegans.* Poster.
- Ryskamp, D.*[^], Olofsson, S., Godfrey, A.*, Williams, S.*, Shores, A.*, and **Kowalski, J.R.** *Investigation of the FSHR-1 receptor and its downstream pathway components in neuromuscular signaling.* Poster.
- Buckley, M.*[^] and **Kowalski, J.R.** *Investigation of G protein-coupled receptor FSHR1 in regulation of UNC-10 RIM synaptic localization in C. elegans.* Poster.
- Wei, B.*[%] and **Kowalski, J. R.** *Investigation of oxi-1 and Its Function in the Neuromuscular Junction under Oxidative Stress.* Poster. *Undergraduate co-authors, [^]Undergraduate presenter, [%]High school presenter

American Society for Cell Biology 57th Annual Meeting. Philadelphia, PA. December 2017.

- Emch, D.*[^], Cherry, K.*, Munneke, A.*, Godfrey, A.*, Damler, E.*, and **Kowalski, J.R.** *Investigation of the FSHR-1 Receptor as a Potential Substrate of the Anaphase-Promoting Complex at the C. elegans Neuromuscular Junction.* Poster. *Undergraduate co-author, [^] Undergraduate presenter

Twenty-first International C. elegans Meeting. Los Angeles, CA. June 2017.

- Olofsson, S., Munneke, A.*, Godfrey, A.*, Kolnik, J.*, Damler, E.* Cherry, K.*, Emch, D.* and **Kowalski, J.R.** *The G protein-coupled receptor FSHR-1 is a candidate APC substrate that controls excitatory to inhibitory signaling balance at the C. elegans neuromuscular junction.* Poster.
- * Undergraduate co-authors

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2017.

- Emch, D.*[^], Cherry K.*, Godfrey, A.*, and **Kowalski, J.R.** *Investigation of the FSHR-1 receptor as a potential substrate of the Anaphase Promoting Complex at the C. elegans neuromuscular junction.* Poster.
- Kreyden, V.A.*[^], Rush, K.M.*, Harrison, M.K.*, and **Kowalski, J.R.** *Investigation of the neuronal functions of the SUMO enzyme UBC-9 in C. elegans.* Oral Presentation.
- Campagnoli, L.C.*[^], Lester, D.L.*, Rush, K.M., Brumbaugh, K.,* and **Kowalski, J.R.** *The investigation of SYD-2 as a candidate substrate of the Anaphase Promoting Complex at the C. elegans NMJ.* Oral Presentation. * Undergraduate co-authors, [^] Undergraduate presenter.

American Society for Cell Biology 56th Annual Meeting. San Francisco, CA. December 2016.

- Olofsson, S., Munneke, A.*, Godfrey, A.*, Kolnik, J.*, Damler, E.* Cherry, K.*, Emch, D.* and **Kowalski, J.R.**. *The G protein-coupled receptor FSHR-1 controls excitatory to inhibitory balance at the C. elegans neuromuscular junction.* Poster.
 - Kreyden, V.A.*^, Rush, K.M.*, Harrison, M.K.*, and **Kowalski, J.R.** *Investigation of the neuronal functions of the SUMO enzyme UBC-9 in C. elegans.* Poster.
 - Campagnoli, L.C.*^, Lester, D.L.*, Rush, K.M., Brumbaugh, K.,* and **Kowalski, J.R.** *The investigation of SYD-2 as a potential substrate of the Anaphase Promoting Complex in promoting GABA release at the C. elegans neuromuscular junction.* Poster.
- * Undergraduate co-authors, ^ Undergraduate presenter.

Gordon Research Conference: Cell Biology of the Neuron. Waterville Valley, NH. June 2016.

- Olofsson, S., Munneke, A.*, Godfrey, A.E.*, Kolnik, J.*, Cherry, K.*, Damler, E.*, and **Kowalski, J.R.** *The G protein-coupled receptor FSHR-1 controls excitatory to inhibitory balance at the C. elegans neuromuscular junction.* Poster. * Undergraduate co-author

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2016.

- Cherry K.*^, Godfrey, A.*, and **Kowalski, J.R.** *Investigation of the localization and expression of the G-protein coupled receptor FSHR-1 in C. elegans neurons.* Oral Presentation.
 - Munneke, A.*^, Olofsson, S., Kolnik, J.*, Godfrey, A.* , and **Kowalski, J.R.** *Investigation of the Role of the G Protein-Coupled Receptor FSHR-1 in Regulating Synaptic Transmission in C. elegans.* Oral Presentation.
 - Kreyden, V.A.*^, Rush, K.M.*, Harrison, M.K.*, and **Kowalski, J.R.** *Investigation of the neuronal functions of the SUMO enzyme UBC-9 in C. elegans.* Poster.
 - Campagnoli, L.C.*^, Lester, D.L.*, Rush, K.M., Brumbaugh, K.,* and **Kowalski, J.R.** *The investigation of SYD-2 as a potential substrate of the Anaphase Promoting Complex in promoting GABA release at the C. elegans neuromuscular junction.* Poster.
- * Undergraduate co-authors, ^ Undergraduate presenter.

American Society for Cell Biology 55th Annual Meeting. San Diego, CA. December 2015.

- Cherry K.*^, Godfrey, A.*, and **Kowalski, J.R.** *Investigation of the localization and expression of the G-protein coupled receptor FSHR-1 in C. elegans neurons.* Poster.
 - Munneke, A.*^, Olofsson, S., Kolnik, J.*, Godfrey, A.* , and **Kowalski, J.R.** *Investigation of the Role of the G Protein-Coupled Receptor FSHR-1 in Regulating Synaptic Transmission in C. elegans.* Poster.
 - Kline, A.*^, Babula, J.* , **Kowalski, J.R.** *Epigallocatechin gallate (EGCG) rescues neuromuscular defects associated with expression of the mammalian Down Syndrome critical gene Dyrk1a in C. elegans motor neurons.* Poster.
 - **Kowalski, J.R.**, Hoops, G., and Johnson, R.J. *Effects of a linked series of research-based laboratories in biochemistry, chemical biology and neurobiology on scientific skills, motivation and research participation in undergraduate science majors.* Poster.
- * Undergraduate co-authors, ^ Undergraduate presenter.

Northeast IDEa Regional Conference. Bar Harbor, ME. September 2015.

- Olofsson, S., Munneke, A.*, Godfrey, A.*, Kolnik, J.*, Cherry, K.*, Damler, E.* and **Kowalski, J.R.**. *The G protein-coupled receptor FSHR-1 regulates the balance of excitatory to inhibitory transmission at the C. elegans neuromuscular junction.* Poster.* Undergraduate co-authors

Twentieth International C. elegans Meeting. Los Angeles, CA. June 2015.

- Olofsson, S., Munneke, A.* , Wasilk, A.* , Kolnik, J.* , Damler, E.* and **Kowalski, J.R.**. *The G protein-coupled receptor FSHR-1 regulates the balance of excitatory to inhibitory transmission at the C. elegans neuromuscular junction.* Poster.* Undergraduate co-authors

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2015.

- Cherry, K. ^{*}, Wasilk, A. ^{*}, and **Kowalski, J.R.** *Investigation of the localization and expression of the receptor FSHR-1 in C. elegans neurons.* Poster.
- Dube S. ^{*}, Dube H. ^{*}, Green, N.B. ^{*}, Johnson, R.J., and **Kowalski, J.R.** *An Enzyme-Activated Fluorescence System Is Useful for Studying the Substrate Specificity of Gut Hydrolases in Caenorhabditis elegans.* Oral presentation.
- Lester, D.K. ^{*}, Rush, K.M. ^{*}, Brumbaugh, K.R. ^{*}, and **Kowalski, J.R.** *Investigation of the active zone protein SYD-2 Liprina as a substrate of the Anaphase-promoting complex ubiquitin ligase at the C. elegans Neuromuscular Junction.* Poster.
- Kreyden, V.A. ^{*}, Rush, K.M. ^{*}, Harrison, M.K. ^{*}, and **Kowalski, J.R.** *Investigation of the neuronal functions of SUMO enzymes at the neuromuscular junction in C. elegans.* Poster.
- Munneke, A.S. ^{*}, Wasilk, A.E. ^{*}, Kolnik, J.C. ^{*}, and Kowalski, J.R. *Investigation of the Neuronal Functions of the FSHR-1 Protein in Controlling Neuromuscular Signaling in C. elegans.* Poster.
- Olofsson, S., Rush, K.M. ^{*}, Kolnik, J.C. ^{*}, and **Kowalski, J.R.** *The G protein-coupled receptor FSHR-1 regulates neuronal signaling at the C. elegans neuromuscular junction.* Poster.

* Undergraduate co-authors, ^ Undergraduate presenter.

American Society for Cell Biology 54th Annual Meeting. Philadelphia, PA. December 2014.

- Dube S. ^{*}, Dube H. ^{*}, Green, N.B. ^{*}, Johnson, R.J., and **Kowalski, J.R.** *A Novel Fluorophore-Based Imaging Method is Useful for Studying the Substrate Specificity of Gut Hydrolases in Caenorhabditis elegans.* Poster.
- Lester, D.K. ^{*}, Rush, K.M. ^{*}, Brumbaugh, K.R. ^{*}, and **Kowalski, J.R.** *Investigation of the active zone protein SYD-2 Liprina as a substrate of the Anaphase-promoting complex ubiquitin ligase at the C. elegans Neuromuscular Junction.* Poster.

* Undergraduate co-authors, ^ Undergraduate presenter.

Gordon Research Conference: Cell Biology of the Neuron. Waterville Valley, NH. June 2014. Poster.

Rush, K.M. ^{*}, Wasilk, A.E. ^{*}, Lester, D.K. ^{*}, Damler, E. ^{*}, and **Kowalski, J.R.** *Characterization of Candidate Substrates of the Anaphase-Promoting Complex at the C. elegans Neuromuscular Junction.*

* Undergraduate co-author

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2014.

- Rush, K.M. ^{*}, Harrison, M.K. ^{*}, and **Kowalski, J.R.** *SUMO Enzymes Act in Neurons to Control Neuromuscular Signaling in C. elegans.* Poster.
- **Kowalski, J.R.** Dube H. ^{*}, Touroutine, D., Rush, K.M. ^{*}, Goodwin, P.R., Carozza, M., Didier, Z. ^{*}, Francis, M.M., and Juo, P. *The Anaphase-Promoting Complex Ubiquitin Ligase Regulates GABA Synaptic Transmission at the C. elegans Neuromuscular Junction.* Oral Presentation.

* Undergraduate co-authors

Nineteenth International C. elegans Meeting. Los Angeles, CA. June 2013.

- **Kowalski, J.R.** Dube H. ^{*}, Touroutine, D., Goodwin, P.R., Carozza, M., Didier, Z. ^{*}, Francis, M.M., and Juo, P. *The Anaphase Promoting Complex Regulates GABAergic Synaptic Transmission at the C. elegans Neuromuscular Junction.* Poster. * Undergraduate co-authors
- **Kowalski, J.R.** *Integrating research and teaching through an inquiry-based C. elegans laboratory in cellular and molecular neurobiology.* Workshop Presentation.

Cold Spring Harbor Laboratory Meeting: The Ubiquitin Family. Cold Spring, NY. May 2013.

- **Kowalski, J.R.** Dube H. ^{*}, Touroutine, D., Goodwin, P.R., Carozza, M., Didier, Z. ^{*}, Francis, M.M., and Juo, P. *The Anaphase Promoting Complex Regulates GABAergic Synaptic Transmission at the C. elegans Neuromuscular Junction.* Poster. * Undergraduate co-authors

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2013.

- Rush, K.M.*[^] and **Kowalski, J.R.** *Investigation of SUMO enzymes at the C. elegans neuromuscular junction.* Poster presentation.
 - **Kowalski, J.R.** Dube H.*[^], Touroutine, D., Goodwin, P.R., Carozza, M., Francis, M.M., and Juo, P. *The Anaphase Promoting Complex Regulates GABAergic Synaptic Transmission at the C. elegans Neuromuscular Junction.* Poster.
- * Undergraduate co-authors, [^] Undergraduate presenter.

American Society for Cell Biology 52nd Annual Meeting. San Francisco, CA. December 2012.

- Wasilk, A.E.*[^], Damler, E.* **Kowalski, J.R.** *Investigation of the relationship between the Anaphase Promoting Complex and the FSHR-1 protein in regulating synaptic transmission at the C. elegans NMJ.* Poster.
 - **Kowalski, J.R.** Dube H.*[^], Touroutine, D., Goodwin, P.R., Carozza, M., Francis, M.M., and Juo, P. *The Anaphase Promoting Complex Regulates GABAergic Synaptic Transmission at the C. elegans Neuromuscular Junction.* Poster.
- * Undergraduate co-authors, [^] Undergraduate presenter.

Gordon Research Conference: Cell Biology of the Neuron. Waterville Valley, NH. June 2012.

- **Kowalski, J.R.** Dube H.*[^], Touroutine, D., Goodwin, P.R., Francis, M.M., and Juo, P. *The Anaphase Promoting Complex Regulates GABAergic Synaptic Transmission at the C. elegans Neuromuscular Junction.* Poster. * Undergraduate co-author

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2012.

- Rush, K.M.*[^] and **Kowalski, J.R.** *Investigation of SUMO enzymes at the C. elegans neuromuscular junction.* Poster. * Undergraduate co-author, [^] Undergraduate presenter.

Eighteenth International C. elegans Meeting. Los Angeles, CA. June 2011.

- **Kowalski, J.R.**, Dube, H.*[^], Damler, E.*[^], Jumani, T.*[^], and Juo, P. *Investigation of Anaphase Promoting Complex Function in Regulating Synaptic Transmission at the C. elegans Neuromuscular Junction.* Poster. * Undergraduate co-authors.

Indiana Academy of Sciences Annual Meeting. Indianapolis, IN. March 2011.

- **Kowalski, J.R.**, Juo P., Dube, H.*[^], Damler E.D.*[^], and Jumani, T.*[^] *The Anaphase Promoting Complex Regulates Synaptic Transmission at the C. elegans Neuromuscular Junction.* Poster.
- * Undergraduate co-authors, [^] Undergraduate co-presenter.

American Society for Cell Biology 50th Annual Meeting. Philadelphia, PA. December 2010.

- **Kowalski, J.R.**, Dahlberg, C.L., and Juo, P. *The deubiquitinating enzyme USP-46 negatively regulates the degradation of glutamate receptors to control their abundance in the ventral nerve cord of C. elegans.* Poster.

Seventeenth International C. elegans Meeting. Los Angeles, CA. June 2009.

- **Kowalski, J.R.** and Juo, P. *USP-46 is a Deubiquitinating Enzyme that Regulates the Synaptic Abundance of the Glutamate Receptor GLR-1.* Oral presentation.

Gordon Conference: Cell Biology of the Neuron. New London, NH. June 2008.

- **Kowalski, J.R.** and Juo, P. *The Anaphase Promoting Complex regulates synaptic transmission at the C. elegans neuromuscular junction.* Poster.

Sixteenth International C. elegans Meeting. Los Angeles, CA. June 2007.

- **Kowalski, J.R.** and Juo, P. *The Anaphase Promoting Complex regulates synaptic transmission at the C. elegans neuromuscular junction.* Poster.

American Society for Cell Biology 45th Annual Meeting. San Francisco, CA. December 2005.

- Yang, L., **Kowalski, J.R.**, Zhan, X., Thomas, S.M., and Lusinskas, F.W. *Cortactin function in endothelial cells is crucial for leukocyte transendothelial migration.* Poster.

American Society for Cell Biology 44th Annual Meeting. Washington, D.C. December 2004.

- **Kowalski, J.R.**, Egile, C., Gil, S., Snapper, S.B., Li, R., and Thomas, S.M. *Examining cortactin function in mammary cell migration and differentiation.* Poster.

1st Symposium of the Dana-Farber/Harvard Cancer Center Program in Breast Cancer.

Boston, MA. April 2004.

- **Kowalski, J.R.**, Egile, C., Gil, S., Snapper, S.B., Li, R., and Thomas, S.M. *Role of N-WASP in cortactin-enhanced migration.* Poster- Poster award.

American Society for Cell Biology 43rd Annual Meeting. San Francisco, CA. December 2003.

- **Kowalski, J.R.**, Egile, C., Gil, S., Snapper, S.B., Li, R., and Thomas, S.M. *Cortactin regulates cell migration through activation of N-WASP.* Poster.

American Society for Cell Biology 41st Annual Meeting. Washington, D.C. December 2001. Participant.

Education Conferences

2017 IRACDA National Conference. Birmingham, AL. June 2017.

Invited Workshop co-Leader, “Creating Synergy by Integrating Interdisciplinary Research and Teaching”

2010 Science Education for New Civic Engagements and Responsibilities (SENCER) Summer Institute, Asheville, NC, July 2010. Participant.

2010 IRACDA National Conference, Boston, MA, June 2010.

Invited Panelist, “Negotiating the Job Offer”.

2009 IRACDA National Conference, San Francisco, CA, June 2009.

Kowalski, J.R. and Juo, P.J. *USP-46 is a deubiquitinating enzyme that regulates the synaptic abundance of the C. elegans glutamate receptor GLR-1.* Poster presentation.

2008 IRACDA National Conference. Chapel Hill, NC. June 2008.

- **Kowalski, J.R.*** and Liu, J. L.* *Teaching information literacy, critical thinking, and scientific communication skills to senior biology majors through a sequenced writing project on cancer biology.* Oral presentation. *Equal contributors.
- **Kowalski, J.R.** and Juo, P.J. *The Anaphase Promoting Complex regulates synaptic transmission at the C. elegans neuromuscular junction.* Poster presentation.

2008 ASM (American Society for Microbiology) Conference for Undergraduate Educators.

Beverly, MA. May 2008. Participant.

2007 IRACDA National Conference. San Diego, CA. June 2007. Participant.

Education Workshops

Fall Academic Workshop, “Butler Beyond”, Butler University, Indianapolis, IN. August 2019.

Participant.

Faculty Book Discussion Group. “The Heart of Higher Education” by Parker Palmer and Arthur Zajonc.

Butler University, Indianapolis, IN Spring 2019. Participant.

Fall Academic Workshop, “Inclusive Excellence”, Butler University, Indianapolis, IN. August 2018.

Participant.

Faculty Book Discussion Group. “Small Teaching” by James M. Lang. Butler University, Indianapolis, IN

Spring 2017. Participant.

Fall Academic Workshop, Butler University, Indianapolis, IN. August 2016. Participant.

Fall Academic Workshop, “Open for Learning” Butler University, Indianapolis, IN. August 2015. Participant.

Fall Academic Workshop, “What is effective student engagement?” Butler University, Indianapolis, IN. August 2014. Participant.

Faculty Book Discussion Group. “Applying Cognitive Science to Education” by Frederick Reif. Butler University, Indianapolis, IN Spring 2014. Participant.

BSA LifeStructures' STEM Learning Environments Think Tank. Purdue University, West Lafayette, IN. August 2013. Participant.

Fall Faculty Workshop, “What is effective teaching?” Butler University, Indianapolis, IN. August 2013. Participant.

Fall Faculty Workshop, “Blueprint for the Future” Butler University, Indianapolis, IN. August 2012. Participant.

Fall Faculty Workshop, “What Our Teachers Do Best”. Butler University, Indianapolis, IN. August 2011. Participant.

Fall Faculty Workshop: “Making a Difference”. Butler University, Indianapolis, IN. August 2010. Participant.

Fall Faculty Workshop: “Connect, Commit, Celebrate”. Butler University, Indianapolis, IN. August 2009. Participant.

“Overcoming Barriers to Student Success”. *21st Tufts University Conference on Teaching and Learning*, Medford, MA. December 2007. Participant.

Graduate Institute for Teaching. Tufts University (Center for Teaching and Learning), Medford, MA. May-June 2007. Participant.

“Teaching the Ne(x)T Generation”. Tufts University (Experimental College), Medford, MA. February 2007. Participant.

“Entering Mentoring” - HHMI Workshop. *Written by Jo Handelsman and colleagues (U. Wisconsin, Madison)*, Tufts University, Boston, MA. January-April 2007. Participant and Session Three Leader.

“Considering Ethics in Teaching, Learning, and Research”. *20th Tufts University Conference on Teaching and Learning*, Medford, MA. December 2006. Participant.

Career Development Workshops/Conferences

Inclusion Advocate Training, Butler University, Indianapolis, IN, August 2019.

CUR (Council on Undergraduate Research) Dialogues Conference. Alexandria, VA, April 2009. Participant.

“The Art of Grantsmanship Workshop: Research Grants in the Sciences”. *Sponsor: Council on Undergraduate Research (Moderator: T. Wenzel, Bates College)*. Alexandria, VA. April 2009. Participant.

“Preparing Future Scholars Workshop”. Tufts University, Medford, MA. October 2008. Participant.

“Lab Dynamics” Lab Management Workshop. *Presented by Dr. Carl Cohen*, Tufts University, Boston, MA. October 2007. Participant.

SERVICE

Departmental, College, and University Service

Member, Provost's Fast Launch Curriculum Working Group	May 2020-present
Chair , University Curriculum Committee	June 2018-present
Inclusion Advocate, 2019 Biological Sciences Faculty Search Committee	August –December 2019
Member, University Curriculum Committee	May 2017-May 2018
Member, Liberal Arts & Sciences (LAS) Center for the Sciences Core Committee	November 2015-present
Organizer , Biological Sciences Fall Seminar Series	August 2014, August 2016-present
Member, Institutional Biosafety Committee	September 2011- present
Advisor, Department of Biological Sciences	August 2009-present
Biology Section Chair , Butler Undergraduate Research Conference	April (2014-2019)
Session Moderator, Butler Undergraduate Research Conference	April (2010-2019)
Member, Liberal Arts & Sciences (LAS) Commission on the Sciences I and II	December 2010-May 2011, September 2013-January 2014, July 2019-present
Member, Neuroscience Minor Committee	September –December 2012
Member, 2017 Biological Sciences Faculty Search Committee	August 2017-December 2017
Member, 2013 Biological Sciences Faculty Search Committee	September-December 2013
Member, 2012 Biological Sciences Faculty Search Committee	September-November 2012
Member, 2011 Biological Sciences Faculty Search Committee	September 2011-January 2012
Member, Corinne Welling Scholarship Committee	April-May 2012
Faculty Orientation Guide	August 2010-2014, 2016-2018
Member, LAS Curriculum Committee	May 2010-May 2012
Member, Science, Technology, Society (STS) Program Health Studies Committee	May 2010-2011
Member, Biological Sciences Ad hoc Curriculum Committees	December 2009-2011

Professional Service

External Sabbatical Reviewer, Carleton College	September 2019
PhD Dissertation Committee Member (JoAnne Babula), IUSM	October 2017-October 2019
Manuscript Reviewer, <i>American Biology Teacher</i>	2018
Panelist, "Funding at a PUI", Skype panel for TEACRS postdoctoral group, Tufts University	2015, 2018
Panelist, "Navigating the PUI and getting tenure", International <i>C. elegans</i> Meeting	2017
Chair , Cell Biology Section, Indiana Academy of Sciences	May 2015-May 2016
*Co-Organizer, Indianapolis Area UbiquitINDY Group	November 2015-present
Vice Chair , Cell Biology Section, Indiana Academy of Sciences	May 2013-May 2015
Mentor/Discussion Leader, GSA Career Luncheon, 19 th International <i>C.elegans</i> Meeting	2013, 2015
Poster Judge, Neurobiology, International <i>C.elegans</i> Meeting	2013, 2015, 2017, 2019
Grant Reviewer, Medical Research Council (Europe)	2013, 2015
Table Leader, Career & Mentoring Lunch, ASCB Meeting	December (2014-2018)
Undergraduate Poster Judge, ASCB Meeting	December (2014-2019)
Research Mentor (Barry Wei), Carmel High School student	May 2015- August 2018
Research Mentor (Julia Wang), Park Tudor High School student	August 2012-August 2015
Participant in Student-Faculty Summer Journal Club (Club Organizer , Summer 2016-present)	June 2010-present
Post-doc Committee Member (Sarah Deffit), Indiana University	April 2015-April 2018
Faculty Mentor (Julia Hum), "Preparing Future Faculty" Graduate program, IUPUI	August 2010- May 2012
Textbook Chapter Reviewer, Sinauer Associates, Inc. Publishers	October 2010
Guest Speaker, Z620 "Special Topics, Research Ethics and Careers in Biology" at IUSM (hosted by Dr.Wayne Forrester, Medical Sciences PhD program)	March 30, 2010
*Organizer & Founder, Indianapolis Area <i>C. elegans</i> Research Group	November 2009-present

Outreach/Community Service

- Event Co-chairperson**, Butler Regional Science Olympiad February 2011-2016, 2019-2020
Butler University, Indianapolis, IN.
- Co-Instructor**, “Middle School Neurobiology Inquiry-based Lab Module” 2015
Westlane Middle School and Butler University, Indianapolis, IN
- Volunteer & Exhibit Contributor**, “Celebrate Science Indiana” Butler University Booth 2011, 2012,
Butler University, Indianapolis, IN 2013, 2014, 2017
- Guest Instructor, High School Zoology class**, *C. elegans* unit October 2013
University High School, Indianapolis, IN
- Keynote Speaker, National Science Honor Society** Induction Ceremony May 2012
University High School, Indianapolis, IN
- Organizing Committee Member**, “Careers in Science” Session Fall 2008
TEACRS program, Tufts University, Boston, MA.
- Presenter, Biomedical Research Experiences** for Engineering Majors July 2008
Tufts University, Summer Undergraduate Program, Boston, MA.
- Guest Instructor, BSCS 10th-11th Grade** Biology Class March 2007
Brookline High School, Brookline, MA
- Lecturer on Obesity and Diabetes**, “Science in the News” Program Fall 2003, 2004
Harvard Medical School, Boston, MA
- Mentor and Team Leader**, Mentoring for Science Program Fall 2001
Harvard Medical School, Office for Diversity and Community Partnership, Boston, MA