



Education

University of Washington

Post-baccalaureate researcher

Seattle, WA

Oct. 2014 → Now

New College of Florida

B.A., Chemistry/Biology (Honors)

Sarasota, FL

Aug. 2007 → May 2011

Thesis: "Ebbs and Glows: Quantifying Small RNA Concentrations in *C. elegans*"

Harriet L. Wilkes Honors College

Early admission in lieu of a high school senior year

Jupiter, FL

Sep. 2006 → May 2007

Academic Projects

Multisensory Integration in Mosquitos

Fairhall Lab, University of Washington

Seattle, WA

Oct. 2014 → Now

I create agent-based dynamical models of mosquito flight behavior and benchmark the models against wind-tunnel behavioral data.

Humpback Whale Census

Kimberley Community Whale Research Project

James Price Point, Australia

Aug. 2012 → Oct. 2012

A community-initiated peer-review at the proposed site of the world's second-largest liquefied gas processing port. This peer-review's estimates of humpback migration and breeding activity near James Price Point revealed gross discrepancies in the original oil conglomerate's survey.

Honors Baccalaureate Thesis

Walstrom Lab, New College of Florida

Sarasota, FL

Aug. 2010 → May 2011

My capstone thesis project proposes a model for RNA Helicase A function in endogenous *C. elegans* RNAi pathways.

Tutorials

New College of Florida

Sarasota, FL

Aug. 2007 → May 2011

I created classes using New College's tutorial system, in which students are able to design courses in collaboration with faculty. Highlights: "Wikipedia: Community, Technology, Society", "Quantitative RT-PCR", "Arduino Programming", "Floridian Invasive Species", and "Organic Lab Research".

Genomics Outreach for Minorities Project (NSF-REU)

Pallanck Lab, University of Washington

Seattle, WA

May 2010 → Aug. 2010

I helped establish a method to grow, stain, and image primary dopaminergic neural culture from *Drosophila* embryos in order to test whether Parkin and PINK1, proteins involved in Parkinson's disease, are recruited to depolarized mitochondria in dopaminergic neurons. This research was published in *PNAS*.

Organic Lab Research Tutorial

Scudder Lab, New College of Florida

Sarasota, FL

Sep. 2008 → Nov. 2009

I partially synthesized precursors to a novel high-valent iron-stabilizing macrocycle based on the active site of cytochrome P450.

Summer Undergraduate Research Program (NSF-REU)

McCartney Lab, Carnegie Mellon University

Pittsburgh, PA

May 2009 → Aug. 2009

I determined that APC2, a protein with probable roles in colon cancer tumorigenesis, did not interact with β -catenin of the Wnt pathway's destruction complex. I determined that APC2's conserved N-terminal domain was not essential for its proper localization. This research was published in *Genetics*.

Independent Study Project

McCord Lab, New College of Florida

Sarasota, FL

Jan. 2008

I studied chromatographic theory and operated gas and high-pressure liquid chromatographs.

Publications

Burman JL, Yu S, Poole AC, **Decal RB** and Pallanck LJ. "Analysis of neural subtypes reveals selective mitochondrial dysfunction in dopaminergic neurons from parkin mutants". *Proc Natl Acad Sci USA*. 2012 Jun 26;109(26):10438-43.

Kunttas-Tatli E, Zhou M, Zimmerman S, Molinar O, Zhouzheng F, Carter K, Kapur M, Cheadle A, **Decal R**, McCartney BM. "Destruction Complex Function in the Wnt Signaling Pathway of Drosophila Requires Multiple Interactions Between Adenomatous Polyposis Coli 2 and Armadillo". *Genetics*. 2012 Mar; 190(3):1059-75.

Presentations

Decal RB, Burman JB, Pallanck L. "Is Parkin Recruited to Damaged Mitochondria in Dopaminergic Neurons?" Society for Advancement of Chicanos and Native Americans in Science. Anaheim, CA. September 2010. Poster.

Decal RB, McCartney BM. "APC2 Does Not Interact with in the β -Catenin Destruction Complex". Annual Sigma Xi Conference. The Woodlands, TX. November 2009. Poster.

Decal RB, McCartney BM. "APC2 Does Not Interact with in the β -Catenin Destruction Complex". Annual Biomedical Research Conference for Minorities. Phoenix, AZ. November 2009. Poster.

Teaching & Outreach

Brain Awareness Week 2015. University of Washington, March 2015.

Upward Bound. University of Washington, July 2010.

Awards, Grants & Honors

NIH PA-12-149 Supplement Grant <i>University of Washington</i>	Jan. 1, 2015 → Jan. 1, 2016
Florida “First Generation” Scholar (two-time recipient) <i>New College of Florida</i>	Aug. 2009 → May 2011
Florida “First Generation” Scholar (two-time recipient) <i>New College of Florida</i>	Aug. 2009 → May 2011
Florida “Bright Futures” Scholar <i>New College of Florida</i>	Aug. 2007 → May 2011
Four Winds Silver Scholar <i>New College of Florida</i>	Aug. 2007 → May 2011
Student Research Grant <i>Dubois-Felsmann Research Endowment</i>	Nov. 2010
Student Travel Grant <i>Dubois-Felsmann Research Endowment</i>	Sep. 2009
ABRCMS Travel Award <i>American Society for Microbiology</i>	Aug. 2009
Honors Scholarship <i>Harriet L. Wilkes Honors College</i>	Sep. 2006 → May 2007
AP Scholar Award <i>J.P. Taravella High</i>	Apr. 2006