

## Education

### Artificial Intelligence Engineer

*Nanodegree*

Udacity.com

Feb. 2017 → Now

### University of Washington

*Post-baccalaureate researcher*

Seattle, WA

Oct. 2014 → Jan. 2016

### 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*"

## 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  $\beta$ -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  $\beta$ -Catenin Destruction Complex". Annual Sigma Xi Conference. The Woodlands, TX. November 2009. Poster.

**Decal RB**, McCartney BM. "APC2 Does Not Interact with in the  $\beta$ -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

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