

# Richard Boeri Decal

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## Education

### New College of Florida

*M.S. Data Science.*

Sarasota, FL  
Aug. 2017 — Now

### Udacity

*Artificial Intelligence Engineer Nanodegree.*

Feb. 2017 — May 2017

### University of Washington

*Post-baccalaureate researcher.*

Seattle, WA  
Oct. 2014 — Jan. 2016

### New College of Florida

*B.A., Chemistry/Biology (with honors).*

Sarasota, FL  
Aug. 2007 — May 2011

### Harriet L. Wilkes Honors College

*Early admission in lieu of a high school senior year.*

Jupiter, FL  
Sep. 2006 — May 2007

## Academic Projects

### Automated Tracing of Neurons

*Allen Institute for Brain Science*

Seattle, WA  
June 2018 — Aug. 2018

Implemented proof of concept for automatically tracing brain cell morphologies using deep reinforcement learning.

### Multisensory Integration in Mosquitos

*Fairhall Lab, University of Washington*

Seattle, WA  
Oct. 2014 — Now

I created agent-based dynamical models of mosquito plume-seeking behavior using wind-tunnel flight data.

### Humpback Whale Census

*Kimberley Community Whale Research Project*

James Price Point, Australia  
Aug. 2012 — Oct. 2012

A community-initiated peer-review of a study conducted by an oil conglomerate at the proposed site of the world's second-largest liquefied gas processing port. Our research revealed gross discrepancies in the original study.

### 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 based on qRT-PCR experiments.

### Tutorials

*New College of Florida*

Sarasota, FL  
Aug. 2007 — May 2011

I created courses with faculty supervision using New College's tutorial system. Highlights: "Quantitative RT-PCR", "Floridian Invasive Species", and "Synthesis of P450".

**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 Synthesis of P450-like Molecule***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*.

**GC and HPLC Instrumental Analysis***McCord Lab, New College of Florida*

Sarasota, FL

Jan. 2008

An independent study project where I learned how to operate liquid chromatographs and analyze their spectra.

## 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 RB**, 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.

**Decal RB**. "Quantifying Small RNA Concentrations in *C. elegans*". Honors thesis, New College of Florida. May 2011. 108 pages.

## 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

**Full tuition waver for master's program**

*New College of Florida*

Aug. 2017 — Now

**NIH PA-12-149 Supplement Grant**

*University of Washington*

Jan. 2015 — Jan. 2016

**Florida "First Generation" Scholar** (two-time recipient)

*New College of Florida*

Aug. 2009 — May 2011

**Florida "Bright Futures" Scholar**

*New College of Florida*

Aug. 2007 — May 2011

**Four Winds Silver Scholar**

*New College of Florida*

Aug. 2007 — May 2011

**Student Research Grant**

*Dubois-Felsmann Research Endowment*

Nov. 2010

**Student Travel Grant**

*Dubois-Felsmann Research Endowment*

Sep. 2009

**ABRCMS Travel Award**

*American Society for Microbiology*

Aug. 2009

**Honors Scholarship**

*Harriet L. Wilkes Honors College*

Sep. 2006 — May 2007

**AP Scholar Award**

*J.P. Taravella High*

Apr. 2006