

Richard Boeri Decal

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Education

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| New College of Florida <i>M.S. Data Science.</i> | Sarasota, FL Aug. 2017 — Now |
| Artificial Intelligence Engineer <i>Nanodegree.</i> | Udacity.com Feb. 2017 — May 2017 |
| University of Washington <i>Post-baccalaureate researcher.</i> | Seattle, WA Oct. 2014 — Jan. 2016 |
| New College of Florida <i>B.A., Chemistry/Biology (with honors).</i> | Sarasota, FL Aug. 2007 — May 2011 |
| Harriet L. Wilkes Honors College <i>Early admission in lieu of a high school senior year.</i> | Jupiter, FL Sep. 2006 — May 2007 |

Academic Projects

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| Automated Tracing of Neurons <i>Allen Institute for Brain Science</i> | Seattle, WA June 2018 — Aug. 2018 |
| Implemented proof of concept for automatically tracing brain cell morphologies using deep reinforcement learning. | |
| Multisensory Integration in Mosquitos <i>Fairhall Lab, University of Washington</i> | Seattle, WA Oct. 2014 — Now |
| I created agent-based dynamical models of mosquito plume-seeking behavior using wind-tunnel flight data. | |
| Humpback Whale Census <i>Kimberley Community Whale Research Project</i> | 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 <i>Walstrom Lab, New College of Florida</i> | Sarasota, FL Aug. 2010 — May 2011 |
| My capstone thesis project proposes a model for RNA Helicase A function in endogenous <i>C. elegans</i> RNAi pathways based on qRT-PCR experiments. | |
| Tutorials <i>New College of Florida</i> | 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 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*.

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 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

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