

# ALEJANDRA C. CANALES

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## Education

August 2014-present      PhD Intergrated Program in Biochemistry  
University of Wisconsin-Madison

May 2014                      B.S. in Biochemistry  
B.S. in Mathematics  
Southern Methodist University, Dallas TX

## Research Experience

2014-present                      **University of Wisconsin-Madison, Department of Biochemistry, Madison, WI**  
Using biochemistry and microscopy to contribute to a project studying how sorcs1 and sortilin affect insulin content and secretory granule maturation in pancreatic beta cells. Working towards elucidating binding partners for these receptor proteins.  
Dr. Alan D. Attie, Principal investigator

2012-2014                      **Southern Methodist University, Department of Biology Dallas, TX**  
Created plasmid used to generate truncation mutants of Complex I K subunit in *E.coli* and performed growth assays and kinetic assays to assess the role of subunit K in proton translocation mechanism.  
Dr. Steven B. Vik, Principal investigator

Summer 2013                      **Integrated Biological Sciences Summer Research Program (IBS-SRP)**  
University of Wisconsin-Madison, Madison, WI  
Introduced mutation in transmembrane domain of SNARE protein, syntaxin, to determine if altered neurotransmitter flux implicates syntaxin as a structural component of the fusion pore in mouse hippocampal synapses.  
Dr. Meyer B. Jackson, Principal investigator

Summer 2012

**NSF-Research Experience for Undergraduates (REU) in  
Chemistry and Biochemistry**

Loyola University Chicago, Chicago, IL

Studied interaction between colloidal MOF-5 nanocrystals and self-assembled monolayer (SAM) to generate controlled surface adhesion.

Dr. Jacob W. Ciszek, Principal investigator

**Teaching Experience**

2012-2014

**Southern Methodist University, Department of Chemistry**

Dallas, TX

Organic Chemistry Laboratory Teaching Assistant

Supervised and assisted students in organic chemistry techniques and syntheses of compounds

**Honors and Awards**

Advanced Opportunity Fellow

Biomedical Researchers in Training Experience (BRITE) scholar

Minority Achievement Award

New Century Scholars Program (NCSP)

**Professional Memberships**

Member, National Society of Collegiate Scholars

**Technical Skills**

Molecular biology: DNA transformation, DNA isolation and purification, enzyme digestion, gel electrophoresis, gel extraction, DNA ligation, Quikchange mutagenesis

Biochemistry: Spectrophotometric enzyme assays, Lowry protein assay, immunoblotting, protein purification

Cell culture: primary culture of hippocampal neurons; cell lines: MIN6, INS1,  $\alpha$ TC-1

Electrophysiology: Whole cell voltage clamping

Organic chemistry: Column chromatography, (vacuum) distillation, airless solvent removal

Instrumentation: Scanning Electron Microscope (SEM), Ultra-High Vacuum Evaporator, Ellipsometry, IR spectroscopy, confocal microscopy

**Community Outreach**

2011-2014 AIDS Services of Dallas (ASD) Outreach Program

2011-2013 Mustang Academic Bridge Program

2010-2014 Women in Science and Engineering (WISE) mentoring program