

# Jacob Cecil

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1007 East Lowell Road, Tucson, AZ 85721 | 865-406-9340 | cecilj@email.arizona.edu

## Education

### MOLECULAR AND CELLULAR BIOLOGY GRADUATE PROGRAM | UNIVERSITY OF ARIZONA

- Advisor: Andrew Capaldi
- Related Coursework: Cell Systems, Genetic and Molecular Mechanisms, Metagenomics, Scientific Communication
- GPA: 4.0/4.0

### BACHELORS OF SCIENCE | DEC 2016 | UNIVERSITY OF TENNESSEE KNOXVILLE

- Major: Biology-Biochemistry and Molecular/Cellular Biology Concentration
- Related coursework: Genetics, Biochemistry, Molecular Biology, Cellular Biology, Neuroscience, Differential Equations
- GPA: 3.89/4.0
- Dean's List: Summa Cum Laude:2013-2016
- University of Tennessee Chancellor's Honors Program

## Research Experience

### UNIVERSITY OF ARIZONA | ANDREW CAPALDI | MARCH 2018-PRESENT

- Investigating novel forms of direct metabolic control by the Target of Rapamycin Complex I (TORC1)
- Ph.D candidacy; Preliminary Exam passed

### UNIVERSITY OF ARIZONA ABBS ROTATIONS | AUGUST 2017-MARCH 12<sup>TH</sup> 2018

- Andrew Capaldi: Investigating the role of the *S. cerevisiae* sterol transporter LTC1 in regulating Target of Rapamycin Complex (TORC1) localization
- Rebecca Mosher: Identification of RNA-Directed DNA methylation genes in charophytic algae
- Bonnie Hurwitz: Analysis of the genome alterations concurrent with symbiosis in *Nostoc* metagenomes.

### OAK RIDGE NATIONAL LAB SULI PROGRAM | JOSH MICHENER, BIOENERGY SCIENCE CENTER | JANUARY 9<sup>TH</sup>-AUGUST 12<sup>TH</sup> 2017

- Testing method of BarSeq-transposon library mutant isolation using CRISPR-Cas9
- Characterization of lignin monomer catabolism genes in *Novosphingobium aromaticivorans*
- Publication: Cecil, Jacob H, David C. Garcia, Richard J. Giannone, Michener, Joshua K. (2018) "Rapid, parallel identification of pathways for catabolism of lignin-derived aromatic compounds in *Novosphingobium aromaticivorans*." *Applied and Environmental Microbiology*.
- Presentations: 2017 Spring and Summer ORAU SULI poster symposium

### UNDERGRADUATE ASSISTANT | DR. BARRY BRUCE LAB, UNIVERSITY OF TENNESSEE | AUGUST 2016-PRESENT

- Cloning and expression of recombinant *T.elongatus* ferredoxin to study physical interface of ferredoxin and the Photosystem I complex with application in biosynthetic photovoltaic cells
- My work was included on a poster which Joy presented at the 2017 Gordon Conference at photosynthesis

### EXCHANGE STUDENT LAB ASSISTANT | DR. KARI ALITALO LAB, WIHURI INSTITUTE/UNIVERSITY OF HELSINKI, FINLAND | JANUARY 2016-MAY 2016

- Investigating mechanisms of VEGFB enhanced angiogenesis by VEGFA and VEGFR2.
- Presentations: Euroscholars Mid-Stay Conference
- UTK Honor's Thesis: Angiogenic Roles of VEGFB and VEGFR1 *in vitro* and *in vivo*

**UNDERGRADUATE ASSISTANT | DR.SHAWN CAMPAGNA LAB, UNIVERSITY OF TENNESSEE| JUNE 2014-DECEMBER 2015**

- Developed methods to quantify intercellular folate metabolites *in vivo* using Orbi-Trap LC-MS/MS.

**Awards**

- National Science Foundation GRFP Honorable mention (2019)

**Outreach Work**

**KEYS INTERNSHIP INSTRUCTOR | SUMMER 2018 | UNIVERSITY OF ARIZONA**

- Taught basic molecular biology techniques to high school students interested in becoming independent research scientists.

**EDUCATIONAL ADVANCEMENT PROGRAM | FALL 2014-FALL 2015 | UNIVERSITY OF TENNESSEE KNOXVILLE**

- Organic/General Chemistry Tutor- I worked as a chemistry tutor for students enrolled in EAP, an organization designed to provide resources to underprivileged or first-generation college undergraduate students.

**OUTREACH EVENTS ATTENDED**

- Science Fair Judge- Tucson Frutchelder's Elementary School 2018
- Science Fair Judge- Tucson St. Michael's Middle School 2018 & 2019
- University of Arizona College of Science "Science Speakeasy" 2019