

PARKER KNIGHT

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EDUCATION

B.S. in Mathematics, University of Florida, Gainesville, FL

Expected Graduation: December 2020

GPA: 3.98

EXPERIENCE

Research Assistant

Aug. 2019 - Present

Bacher Group, Dept. of Biostatistics, University of Florida

Gainesville, FL

- Designed algorithms and software for efficient visualizations of DNA methylation data
- Analyzed single-cell RNA-seq data and presented results to investigators with scientific figures

Research Intern

June 2019 - Aug. 2019

Fred Hutchinson Cancer Research Center

Seattle, WA

- Analyzed diverse *omics* data sets and communicated results to lead statisticians and Principal Investigators
- Developed an R package for optimizing high dimensional, doubly-structured regression models

Software Engineer Intern

May 2018 - Aug. 2018

ITProTV

Gainesville, FL

- Developed REST API endpoints used across a microservice architecture
- Wrote front-end features used directly in customer-facing products
- Collaborated with team members, including participation in sprint planning sessions and pair programming

Research Assistant

April 2018 - April 2019

Febo Lab, McKnight Brain Institute

Gainesville, FL

- Designed and developed audio processing pipeline for analysis of animal vocalizations, including filtering and feature extraction
- Executed machine learning classification of complex audio data to study the behavioral effects of drug treatments
- Processed resting state fMRI images for use in functional connectivity studies

Research Assistant

Sept. 2016 - April 2019

Buijnzeel Lab, McKnight Brain Institute

Gainesville, FL

- Planned and executed behavioral neuroscience experiments, including Large Open Field, Elevated Plus Maze, and Novel Object Recognition tests
- Analyzed behavioral data using clustering methods and hypothesis testing
- Communicated results to Principal Investigators, through visualizations, formal reports, and presentations

INVOLVEMENT

Learning Assistant

Aug. 2018 - April 2019

Dept. of Mathematics, University of Florida

Gainesville, FL

- Lead group discussion of course material with undergraduate students
- Assisted students with homework and classwork
- Courses taught: Analytical Geometry and Calculus 1, Analytical Geometry and Calculus 2

Director of Multimedia

Center for Undergraduate Research, University of Florida

May 2018 - April 2019

Gainesville, FL

- Coordinated and led production of video content to promote research-related events
- Met with faculty and other board members to manage the Center's website content

Peer Advisor

Center for Undergraduate Research, University of Florida

August 2017 - May 2018

Gainesville, FL

- Held office hours twice weekly to provide assistance to undergraduate students in finding research opportunities on campus
- Advised students in enhancing their research experience through scholarships and presentations

PUBLICATIONS

- Chellian, R., Behnood-Rod, A., Wilson, R., Wilks, I., **Knight, P.**, Febo, M., Bruijnzeel, A. W. (2020). Exposure to smoke from high-but not low-nicotine cigarettes leads to signs of dependence in male rats and potentiates the effects of nicotine in female rats. *Pharmacology Biochemistry and Behavior*, 172998.
- Chellian, R., Wilson, R., Polmann, M., **Knight, P.**, Behnood-Rod, A., Bruijnzeel, A. W. (2020). Evaluation of sex differences in the elasticity of demand for nicotine and food in rats. *Nicotine and Tobacco Research*, 22(6), 925-934.
- Tan, S., Xue, S., Behnood-Rod, A., Chellian, R., Wilson, R., **Knight, P.**, Panunzio, S., Lyons, H., Febo, M., Bruijnzeel, A. W. (2019). Sex differences in the reward deficit and somatic signs associated with precipitated nicotine withdrawal in rats. *Neuropharmacology*, 160, 107756.
- Bruijnzeel, A. W., Knight, P., Panunzio, S., Xue, S., Bruner, M. M., Wall, S. C., Pompilus, M., Febo, M., Setlow, B. (2019). Effects in rats of adolescent exposure to cannabis smoke or THC on emotional behavior and cognitive function in adulthood. *Psychopharmacology*, 236(9), 2773-2784.

PRESENTATIONS

- "Estimation and inference for high dimensional, doubly-structured regression models"
Fall Undergraduate Research Symposium, Gainesville, FL October 2019
- "Virtual Reality-based Learning Games for Computer Science Education"
Spring Undergraduate Research Symposium, Gainesville, FL April 2019
- "Sex Differences in Rodent Behavior: a Hierarchical Clustering Analysis"
UF College of Medicine Poster Session, Gainesville, FL February 2019
- "Machine Learning Classification of Ultrasonic Animal Vocalizations"
Fall Undergraduate Research Symposium, Gainesville, FL November 2018
- "Adolescent Cannabis Smoke Exposure Does Not Affect Anxiety or Depressive-like Behavior in Male and Female Rats in Adulthood"
Center for Addiction Research and Education Spring Symposium, Gainesville, FL April 2018
- "Long Term Behavioral Effects of Cannabis Smoke in Rats"
Fall Undergraduate Research Symposium, Gainesville, FL November 2017

HONORS AND AWARDS

Honorable Mention in COMAP's Mathematical Contest in Modeling	2020
Cold Spring Harbor Laboratory Undergraduate Research Program (Declined)	2019
Fred Hutchinson Summer Undergraduate Research Program (\$4750)	2019
College of Liberal Arts and Sciences Dean's List	All Semesters
Anderson Scholar with High Distinction	2018
University Scholars Research Scholarship (\$1750)	2018
University Scholars Research Scholarship (\$1750)	2017
Student Honors Organization	2016

SKILLS

Languages: R, Python, Haskell, C++, JavaScript
Software: Linux, Git, Docker, SQLite