SCARLET JINHONG PARK

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EDUCATION AND TRAINING

Carleton College — Northfield, MN
Bachelor of Arts (*Magna Cum Laude*) — Sep 2011 – Jun 2015
Major: Psychology (Distinction) / Concentration: Neuroscience

The Scripps Research Institute, Florida — Jupiter, FL
Doctor of Philosophy — Aug 2016 – Aug 2023
Advisor: William W. Ja, Ph. D.

Wertheim UF Scripps Institute — Jupiter, FL
Postdoctoral Research Associate — Aug 2023 – Present
Advisor: William W. Ja, Ph. D.

Nova Southeastern University — Palm Beach Gardens, FL
Research Associate Scientist / Lab Head — Dec 2023 – Present
Supervisor: Ken Dawson-Scully, Ph. D.

PUBLICATIONS

Shirasu-Hiza M, (...), **Park SJ**, (...) (2024) Neuronal knockdown of Cullin3 as a Drosophila model of autism spectrum disorder. *Scientific Reports* [PMID: 38233464]

Park SJ, Ja WW (2023) FEEDING BEHAVIOR: The Basics of Base Sensing. *Nat Metab* [PMID:36941449]

Ulgherait M, (...), **Park SJ**, (...) Shirasu-Hiza M (2021) Circadian Autophagy Drives iTRF-mediated Longevity. *Nature* [PMID:34588695]

Wu Q, **Park SJ**, (...), Ja WW (2021) Vitamin preference in *Drosophila*. *Curr Biol* [PMID: 34375595]

Botero V, (...), **Park SJ**, (...), Tomchik SM (2021) Neurofibromin regulates metabolic rate via neuronal mechanisms in *Drosophila. Nat Commun* [PMID: 34257279]

Park SJ, Ja WW (2020) Absolute ethanol intake predicts ethanol preference in *Drosophila*. *J Exp Biol* [PMID: 32366685]

Wang QP, (...), **Park SJ**, (...), Neely GG (2020) PGC1α Controls Sucrose Taste Sensitization in *Drosophila. Cell Rep* [PMID: 32268099]

Wu Q, (...), **Park SJ**, (...), Yang M (2020) Excreta quantification (EX-Q) for measuring longitudinal accumulation of food intake in *Drosophila*. *iScience* [PMID: 31901635]

Chen YD, **Park SJ**, (...), Dahanukar AA (2019) Combinatorial pharyngeal taste coding for feeding avoidance in adult *Drosophila*. *Cell Rep* [PMID: 31644916]

Chen YD, **Park SJ**, Ja WW, Dahanukar A (2018) Using *Pox-neuro* (*Poxn*) mutants in *Drosophila* gustation research: a double-edged sword. *Front Cell Neurosci* [PMID: 30405359]

Grim T, **Park SJ**, (...), Bohn, LM (2018) The effect of quinine in two bottle choice procedures in C57BL6 mice: opioid preference, somatic withdrawal, and pharmacokinetic outcomes. *Drug Alcohol Depend* [PMID: 30138791]

Keebaugh ES, **Park JH**, (...), Ja WW (2017) Nutrition influences caffeine-mediated sleep loss in *Drosophila*. *Sleep* [PMID: 29029291]

Murphy KR, (...), **Park JH**, Ja WW (2017) Simultaneous measurement of sleep and feeding in individual *Drosophila*. *Nat Protoc* [PMID: 29022943]

Lee GY, (...), **Park JH**, (...), Treasure J (2018) Feasibility and acceptability of a prevention program for eating disorders (Me, You, and Us) adapted for young adolescents in Korea. *Eat Weight Disord* [PMID: 28871526]

Park JH, (...), Ja WW (2017) Sucralose suppresses food intake. *Cell Metab* [PMID: 28273467]

Meerts SH, **Park JH**, Sekhawat R (2016) Sexual experience modulates partner preference and mPOA nitric oxide synthase in female rats. *Behav Neurosci* [PMID: 27657310]

Cardi V, (...), **Park J**, (...), Treasure J (2015) Self Help and Recovery guide for Eating Disorders (SHARED): study protocol for a randomized controlled trial. *Trials* [PMID: 2588597]

Kim YR, Kim CH, **Park JH**, Pyo J, Treasure J (2014) The impact of intranasal oxytocin on attention to social emotional stimuli in patients with anorexia nervosa: a double blind within-subject cross-over experiment. *PLoS One* [PMID: 24603863]

Bou Mansour C, (...), **Park JH**, Van Der Wege M (2021) Familiarity breeds overconfidence: group membership and shared experience in the closeness-communication bias. *J Exp Soc Psychol* [DOI]

Manuscripts in Progress

Park SJ*, Murphy KR*, Ja WW (in revision) Energy Deficit is a Key Driver of Sleep Homeostasis *bioRxiv* [DOI]

Gonzalez-Lerma P, Lloyd C, **Park SJ**, Dawson-Scully K, (in review) Anticonvulsant effects of novel and repurposed drugs on docetaxel-induced neuropathy in *C. elegans*

Park SJ, (...), Ja WW (in submission) Caloric restriction-mediated lifespan extension is associated with positive energy balance.

Park SJ, Ja WW. (in progress) Taste-mediated suppression of sucrose intake in *Drosophila melanogaster*.

Park SJ*, Murphy KR*, (...), Ja WW (in progress) Neuronal regulation of meal size in *Drosophila*.

CONFERENCE POSTER PRESENTATIONS

Park SJ, Ja WW (2024, November). *Pharyngeal Suppression of Food Intake by Nutrient Quality in Drosophila melanogaster*. HHMI-Janelia Sensory Biology of Ingestion: Integrating the Internal and External Worlds.

Park SJ, Ja WW (2023, July). *Marshmallow test for flies: Suppression of low-quality food consumption in Drosophila melanogaster.* International Behavioral Neuroscience Society.

Park SJ, Keebaugh ES, Ja WW (2019, October). *Total food consumption predicts behavioral changes from pharmacological, dietary, and genetic manipulations.* Cold Spring Harbor Laboratory Neurobiology of *Drosophila*.

Park JH, Murphy KR, Huber R, Ja WW. (2017, October). *Simultaneous, real-time measurements of motion and feeding in individual flies.* Cold Spring Harbor Laboratory Neurobiology of *Drosophila*.

Bachman R, Park JH, Sekhawat R, Meerts SM. (2015, April-June). *Sexual experience moderates partner preference in female rats*. Annual Meeting of the Society for Behavioral Neuroendocrinology, Minnesota Undergraduate Psychology Conference.

Park JH (2015, April). *Estrogen is necessary for the development of activity-based anorexia*. Minnesota Undergraduate Psychology Conference.

Van Der Wege M, Mansour CB, Cherry L, Cocroft C, Crews A, Danielsson G, Jacobsen J, Magats N, Park J, Roman S, Serres N (2014, November). *Does the closeness-communication bias extend to group membership?* Annual Meeting of the Psychonomics Society.

Kim Y, Seong Y, Park J, Pyo J, Treasure J. (2014, March). *Intranasal oxytocin attenuates attentional bias for eating and shape stimuli in patients with anorexia nervosa*. International Conference of Eating Disorders.

TALKS

"*Marshmallow test for flies: Suppression of feeding based on dietary quality in D. melanogaster*" Seminar for Joint Drosophila Group Meeting, Indiana University Bloomington (September 2022)

"*Goldi-Fly and its search for the 'sweet spot' of sugar intake"* Invited talk for Neuroscience Capstone Seminar, Carleton College, MN (April 2021)

"*Sweet taste and nutrients independently suppress food intake*" Neuroscience Department Research Meeting, The Scripps Research Institute, FL (February 2020)

"*What makes a meal? Defining meals from bouts and identifying regulators of meal size"* Neural Circuits and Behavior I Platform Session, 60th Annual Drosophila Research Conference (March 2019) and 2019 Flies on the Beach (April 2019).

"*The Effect of Artificial Sweeteners on Food Intake in Drosophila*" Neuroscience Department Research Meeting, The Scripps Research Institute, FL (May 2017)

"What Can Rats Tell Us About Anorexia Nervosa?" Nominated talk delivered at the 2015 Reception of the Sigma Xi Carleton College Chapter (May 2015)

RESEARCH EXPERIENCE

Nova Southeastern university, Palm Beach Gardens, FL — Dec 2023 – Present

Postdoctoral Associate / Lead Scientist
PI: Ken Dawson-Scully, PhD

Screened novel and FDA-approved molecules for possible anticonvulsant activities in *C. elegans*. Initiated a successful application for funding through Epilepsy Therapy Screening Program (ETSP). Coordinated a collaboration with a *Drosophila* lab at UF Scripps to investigate the pathway by which the drugs extend healthspan and lifespan. Advised two graduate students through defense and publications. Submitted a full R16 grant to NIH for establishing a high-throughput platform for screening anticonvulsants. Mentored two graduate students, eight internal undergraduate students, one external undergraduate student, and five local high school students.

The Scripps Research Institute, Jupiter, FL — Aug 2016 – Aug 2023 (PhD), Present (Postdoc)

Graduate Student, Postdoctoral Associate
PI: William W. Ja, PhD
Title: Taste-mediated suppression of sugar intake in *Drosophila melanogaster*

Studied how peripheral taste and internal state modulates different subcomponents of feeding behavior in *Drosophila melanogaster*. Combined genetic and behavioral approach to effectively screen for neuronal and genetic modulators of food intake control in a concentration-specific manner. Mentored three high school, seven undergraduate, and three rotation students. Served as a teaching assistant for three classes for Scripps program graduate students (two years of *Neurobiology of Drug and Alcohol Addiction*, led by Dr. Eric Zorrilla and Dr. Barbara Mason; and one year of *Biological Statistics*). Was involved in the development of four assays for measuring food intake. Oversaw general lab operations and management.

Dartmouth College, Department of Psychological and Brain Sciences, Hanover, NH /
Geisel School of Medicine, Program in Experimental and Molecular Medicine, Lebanon, NH — Aug 2015 – June 2016

Research Assistant / Lab Technician
PIs: David Bucci, PhD / Bryan Luikart, PhD

Studied non-pathological age-related memory loss in mice and the genes involved, translating genetic findings in *Drosophila* to mammalian models. The job involved working in two collaborating labs. With Dr. Bucci, I developed behavioral assays that could evaluate memory decay in mice and tested mice of various genders and strains. With Dr. Luikart, I knocked out various genes (ex. *Dtnbp-1*, *Pten*, *Ncaph-2*) in mice using the CRISPR/Cas9 technology and observed morphological changes in the hippocampus. Mentored three undergraduate students, one of which is pursuing an academic career.

Carleton College, Northfield, MN

Senior Integrative Exercise — Aug 2014 – Mar 2015

Advisors: Sarah Meerts, PhD, Lawrence Wichlinski, PhD

Title: "*What Triggers Activity-Based Anorexia? An Investigation of the Interaction Between Diet Restriction and Activity and the Necessity of Gonadal Hormones*"

Studied the individual effects of diet restriction and running wheel activity on the progression of activity-based anorexia, a rodent model of the human anorexia nervosa, and the protective effect of ovariectomy against the development of activity-based anorexia. Received distinction for the project and presented the results at 2015 Minnesota Undergraduate Psychology Conference.

Behavioral Neuroendocrinology Lab, Carleton College Aug 2014 – June 2015

Research Assistant

PI: Sarah Meerts, PhD

Studied whether experience with paced mating or experimenter-delivered vaginocervical stimulation alters female rats' preference for males and Fos and nitric oxide synthase expression patterns in the brain following copulation. Research presented at the 2015 Annual Meeting of the Society for Behavioral Neuroscience and the 2015 Minnesota Undergraduate Psychology Conference. Research published in *Behavioral Neuroscience*.

Language and Cognition Research Lab, Carleton College Mar 2014 – June 2015

Research Assistant

PI: Mija van der Wege, PhD

Studied how perceived status of in-groupness affects the estimation of common ground. Research presented at the 2014 Annual Meeting of the Psychonomic Society and at the 2015 Minnesota Undergraduate Psychology Conference. Research published in *Journal of Experimental Social Psychology*.

King's College London, Eating Disorders Research Lab, Institute of Psychiatry, London, UK Jun – Aug 2014

Research Assistant

PI: Janet Treasure, OBE, PhD, FRCP, FRPsych

Devised a self-help workbook and a series of motivational video clips for patients with eating disorders to use with recovery guide. Protocol published in *Trials*.

Inje University Paik Hospital, Eating Disorders Research Lab,
Inje University Paik Hospital, Seoul, South Korea Jun 2013 – Aug 2014

Research Assistant

PI: Youlri Kim, MD

Studied the clinical feasibility of intranasally delivered oxytocin for patients with eating disorders. Found that oxytocin nose spray alleviates abnormal attention towards emotional and eating disorder-related visual cues. Research published in *PloS One*. Also assisted with devising a prevention program. Protocol published in *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity*.

TEACHING EXPERIENCE

Neurobiology of Alcohol and Drug Addiction (NEURO550) The Scripps Research Institute

Course Directors: Eric Zorrilla, PhD; Barbara Mason, PhD FA 2020, FA 2022

- Served as a teaching assistant for a graduate-level course on the neural circuits and signaling underlying brain dysregulation in addiction due to various factors and drug exposure, including topics on drug pharmacology and clinical treatment approaches.
- Advised course directors and guest lecturers on course materials and strategies to promote student engagement and participation.
- Presented the challenges and success of the course at all-lecturer meetings by invitation.
- Managed course logistics, including coordinating lecturer schedules and setting up Canvas for course management and grading.
- Facilitated small-group discussion sections.

- Graded in-class participation, journal club discussions, and answers to open-ended questions in exams, providing detailed and constructive feedback to guide student improvement.
- Produced extra materials that assisted the course, instructors, and students in gauging performance.

Introduction to Biostatistics (TRBIO420) The Scripps Research Institute

Course Directors: Jill Waalen, MD, MS, MPH, FACPM WI 2019

- Served as a teaching assistant for a graduate-level course on foundational principles and applications of biostatistics relevant to scientific fields.
- Provided individual feedback to student questions, concerns, and assignment submissions.
- Graded problem sets focused on statistical analysis techniques using the R statistical package and answers to open-ended questions in exams, providing feedback on methodology and interpretation.
- Managed course logistics, including setting up Canvas for course management and grading.

AWARDS AND SCHOLARSHIPS

Robert M. Sandelman Awards for Scientific Excellence	2019
Farris Foundation Graduate Student Fellowship	2019
DeVos Professional Development Award	2017
Phi Beta Kappa Carleton College Chapter	2015
Sigma Xi Carleton College Chapter	2015
Annual Dean's List (Carleton College)	2012 - 2013
Dean's Office Research Scholarship (Carleton College)	Mar, Nov 2014; Jun 2015
Multicultural Alumni Network Scholarship (Carleton College)	2014
HHMI Travel Award (Carleton College)	Nov 2014; Jun 2015

PROFESSIONAL MEMBERSHIPS

Psychonomic Society
Society for Behavioral Neuroscience (SBN)
Genetic Society of America (GSA)
International Behavioral Neuroscience Society (IBNS)

SKILLS

Biostatistics & Data Analysis

- Statistical Methods: Experimental Design, Quantitative Behavior Analysis, Descriptive and Inferential Statistics (incl. linear/multivariate regression, Bayesian inference, PCA), Data Interpretation and Visualization
- Statistical Software: R, MATLAB, SPSS, GraphPad Prism, MS Excel
- Biostatistics Knowledge: Foundational understanding via graduate-level teaching assistance and research experience in clinical psychiatry and cognitive science

Programming & Software

- Programming Languages: Python, Java, C++
- Image Analysis and Data Visualization: ImageJ, Adobe Creative Suite (Illustrator, Photoshop, InDesign), GIMP
- Office Suite: Microsoft Office Suite (Word, Excel, PowerPoint)

Technical & Laboratory Skills

- Molecular Biology: Quantitative gene expression (qRT-PCR), qualitative/quantitative protein analysis (Western Blotting and SDS-PAGE), genotyping and DNA purification (PCR and gel electrophoresis), plasmid design and construction, immunochemistry

(immunohistochemistry, immunocytochemistry, immunofluorescence), tissue preparation (perfusion, cryostat sectioning), cell culture (HEK293, CHO), aseptic techniques (*E. coli*, *C. elegans*), microscopy (confocal, brightfield, fluorescent)

- Genetic Engineering: *D. melanogaster* genetics (GAL4/UAS, LexA/lexAop, FLPL/FRT, CRISPR/Cas9, crossing schemes), CRISPR/Cas9 and Cre/*lox* (local gene knockouts) via intracranial viral (retro/lenti/AAV) injections in *M. musculus*
- Model Organisms: *M. musculus, R. norvegicus, D. melanogaster, C. elegans*
- Rodent Techniques: Husbandry, Behavioral Testing, Surgery (i.p., s.c., i.c. injections; ovariectomy; perfusion and brain extraction)
- Human Studies: Longitudinal data collection (observational logging, quantitative surveys), randomized controlled multi-institutional clinical trials, experimental design, statistical inference

Research & Therapeutic Area Expertise:

- Neuroscience: Research experience in various neuroscience fields, including clinical psychiatry, cognitive science, behavioral neuroscience, molecular biology, and behavioral genetics. Deep knowledge demonstrated through research (BA, PhD, Postdoc), coursework (BA, PhD), and teaching.
- Metabolism & Physiology: Extensive research experience investigating the effects of food intake and energy expenditure on metabolic health, including metabolic health, sleep, and aging
- Assay Development: Involvement in developing novel assays for measuring biological outcomes such as food intake and quantitative, machine vision-driven assessment of convulsive behavior.

Project Management & Regulatory Compliance

- Project Leadership: Experience as Research Associate Scientist / Lab Head.
- Grant Writing & Management: Successfully initiated collaboration with NIH-funded program (ETSP) and submitted NIH grants (R16)
- Regulatory Compliance: IRB & IACUC project management and administration.
- Mentoring & Training: Proven ability to advise, train, and mentor students at high school, undergraduate, and graduate levels
- Team Leadership: Experience guiding graduate students through defense and publications

Communication & Collaboration:

- Scientific Writing: Extensive track record of first-author and co-authored publications in peer-reviewed journals (e.g., *Nature*, *Nature Metabolism*, *Current Biology*, *Cell Reports*)
- Presentations: Experience presenting research findings at international conferences and invited seminars
- Cross-functional Collaboration: Proven ability to work effectively with multiple group leaders and coordinate with different departments and institutions
- Teaching & Course Support: Experience developing course materials and facilitating discussions in graduate-level courses.

REFERENCES

Ken Dawson-Scully
Professor; Senior Vice President / Associate Provost
Nova Southeastern University
3300 S. University Drive, Fort Lauderdale, FL 33328
954-262-7538
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Relationship: Principal Investigator

William Ja
Associate Professor
Herbert Wertheim UF Scripps Institute for Biomedical Innovation & Technology
130 Scripps Way
561-228-2956
w.ja@ufl.edu
Relationship: Graduate Advisor

Eric Zorrilla, PhD
Associate Professor
The Scripps Research Institute

10550 N. Torrey Pines Road, La Jolla, CA 92037
(858) 784-7416
ezorrill@scripps.edu
Relationship: Course director