

Ryan A. Opel

Research Assistant, Computational Sleep Lab
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Employment

Portland VA Computational Sleep Lab, *Research Assistant* 2015–Present
Principal Investigator: Miranda M. Lim, M.D., Ph.D.

- Performed primary data analysis & cleaning, programming, and advanced statistics for this multi-disciplinary lab.
- Used a combination of R and Python to analyze large repositories of brain electroencephalography (EEG), animal behavior, biometric, and clinical data.
- Fostered expertise in animal handling, EEG signal processing, sleep scoring, rodent surgery, and animal behavior.

UCSB Vision & Image Understanding Lab, *Undergraduate Research Assistant* 2013–2015
Principal Investigator: Miguel P. Eckstein, Ph.D.

- Played a critical role in the development, execution, and debugging of MATLAB-based experiments focusing on machine learning, computer vision, and human-computer visual interfaces.

Education

University of California, Santa Barbara 2011–2015
B.S. Pharmacology, B.S. Biopsychology

Professional Development

Oregon Health & Science University 2016
Estimation and Hypothesis Testing for Applied Biostatistics (BSTA 511)
Instructor: Michael R. Lasarev, M.S.

- Earned an A grade while using R in this Stata-based course.
- Tuition covered by Principal Investigator of current employment.

Johns Hopkins University 2015
R Programming
Instructor: Roger D. Peng, Ph.D.

- Completed this Coursera course *with distinction*, achieving a grade of 99%.

Invited National Talks

Associated Professional Sleep Societies (APSS) annual SLEEP meeting, Denver, CO.
Sleep Disruption is Associated with Fearful Behavior in a Mouse Model of Post-Traumatic Stress. 2016.

Associated Professional Sleep Societies (APSS) annual SLEEP meeting, Denver, CO.
Developmental Sleep Fragmentation Impairs Social Development in Male, but not Female, Prairie Voles. 2016.

Publications

1. **Opel RA**, Weymann KB, Kuzma NN, Lim MM. *Investigating the link between head trauma and REM sleep behavior disorder*. (In Preparation).
2. Elliott JE, **Opel RA**, Chau AQ, Weymann K, Storzbach D, Callahan M, Heinricher M, Lim MM. *Relationships between sleep and pain in Veterans with TBI and PTSD*. (In Preparation).
3. Jones CE, **Opel RA**, Quintana J, Champaigne RD, Cocking DL, Hammock EAD, Lim MM. *Let Sleeping Voles Lie: Early Life Sleep Fragmentation Impairs Social Development and Alters Parvalbumin Expression in the Somatosensory Barrel Cortex in Prairie Voles*. (In Preparation).

Conference Abstracts

(*Denotes Presenting Author)

1. **Opel RA**, Weymann KB, Kuzma NN, Lim MM. *Investigating the link between head trauma, REM sleep behavior disorder, and neurodegeneration*. 2017. Abstract submitted to American Neurological Association in San Diego, CA. To be published in a supplement to the Annals of Neurology.
2. Elliott JE, Weymann KB, Barsalou Y, **Opel RA**, Geiger MR, Teutsch P, Chau AQ, Oken BS, Heinricher MM, Lim MM. *Trauma exposure potentiates the Relationship Between Sleep and Chronic Pain in Veterans with TBI and PTSD*. 2017. Abstract submitted to SLEEP meeting in Boston, MA. To be published in Supplement of SLEEP.
3. Jones CE, Quintana J, **Opel RA**, Cocking DL, Hammock EAD, Lim MM.* *Early post-natal sleep fragmentation impairs social development and alters parvalbumin interneuron expression in adult prairie voles**. 2017. Abstract submitted to SLEEP meeting in Boston, MA. To be published in Supplement of SLEEP.
4. **Opel RA***, Weymann KB, Kuzma NN, Lim MM. *Disruptive nocturnal behavior and elevated EMG tone during sleep in Veterans with TBI and PTSD*. 2017. Abstract submitted to SLEEP meeting in Boston, MA. To be published in Supplement of SLEEP.
5. Teutsch P, **Opel RA**, Chau AQ, Cayton J, Akins DA, Lim MM. *Sleep and behavioral phenotype of a combined mouse model of TBI and PTSD*. 2017. Abstract submitted to SLEEP meeting in Boston, MA. To be published in Supplement of SLEEP.
6. Akins DJ, **Opel RA***, Modarres M, Kuzma NN, Gieger MR, Lim MM. *Sleep disruption predicts fearful behavior in a mouse model of post-traumatic stress disorder*. 2016. Abstract submitted to SLEEP meeting in Denver, CO. SLEEP, 39(Abstr. Supp.), pg A8.
7. Hammock EAD, Champaigne RD, Cocking DL, **Opel RA***, Driessen RC, Lim MM. *Developmental sleep fragmentation impairs social development in male, but not female, prairie voles*. 2016. Abstract submitted to SLEEP meeting in Denver, CO. SLEEP, 39(Abstr. Supp.), pg A63-4.
8. Hammock EAD, Jones CE, Quintana J, Champaigne RD, **Opel RA**, Cocking DL, Chau AQ, Rodriguez Toro J, Lim MM. *Early life sleep fragmentation impairs social behavior and affects parvalbumin expression in adult prairie voles*. 2016. Abstract submitted to Society for Social Neuroscience meeting in San Diego, CA.
9. Hammock EAD, Quintana J, Champaigne RD, **Opel RA***, Cocking DL, Driessen RC, Lim MM. *Effect of developmental sleep fragmentation on social behavior and parvalbumin expression in prairie voles*. 2016. Abstract submitted to Society for Neuroscience meeting in San Diego, CA.
10. **Opel RA***, Modarres M, Akins DJ, Kuzma NN, Gieger MR, Lim MM. *Quantitative sleep EEG in a mouse model and in human subjects with post-traumatic stress disorder*. 2016. Abstract submitted to

Society for Neuroscience meeting in San Diego, CA.

11. Hammock EAD, Cocking DL, Champaigne RD, **Opel RA**, Driessen RC, Lim MM. *Early post-natal sleep fragmentation prevents normal social development in male, but not female, prairie voles*. 2016. Abstract submitted to 2nd annual Gordon Research Conference meeting on Sleep Regulation and Function in Galveston, TX.

Competencies

Languages & Scripting: R, Python, PowerShell, Excel/VBA, L^AT_EX, bash, HTML/CSS

Laboratory Skills: EEG signal processing, sleep scoring, rodent surgery, animal behavior

References

Miranda M. Lim, M.D., Ph.D.

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