Curriculum Vitae

June, 2022

Nicole C. Swann, Ph.D.

nswann@uoregon.edu
https://swannlab.uoregon.edu/
Twitter: @SwannLab

Education

2006-2012: **Doctor of Philosophy in Neurosciences**
University of California San Diego
La Jolla, CA

2002-2006: **Bachelors of Arts with Honors in Molecular Cell Biology: Neurobiology Emphasis and Psychology**
University of California Berkeley
Berkeley, CA

Positions

- **Assistant Professor** September 2017 - Present
  University of Oregon
  Department of Human Physiology

- **Postdoctoral Researcher** September 2012- August 2017
  University of California, San Francisco
  Advisor: Philip Starr, MD PhD

- **Graduate Student** September 2006- August 2012
  University of California San Diego
  Advisor: Adam Aron, PhD

- **Research Assistant** September 2003- August 2006
  University of California, Berkeley
  Advisor: Robert Knight, MD

Research Interests

Neurophysiology of Movement • Movement Control/Inhibition/Stopping • Electrophysiology (Electrocorticography/Electroencephalography/Local Field Potentials) • Neural Oscillations • Parkinson's disease (and other movement disorders) • Cortical Basal Ganglia Circuitry • Deep Brain Stimulation

Grants and Fellowships

- P50 Morris K. Udall Centers of Excellence for Parkinson's Disease Research at Emory 2021-2026
  Cortical electrophysiology of response inhibition and implications for DBS therapy in patients
  Role: Co-I
- Medical Research Foundation New Investigator Grant 2020-2022
  Investigate a non-invasive EEG biomarker of Parkinson's disease.
  Role: PI
- U01 NIH NIMH 2020-2025
  ProNET: Psychosis-Risk Outcomes Network
  Role: Co-I

- Renée James Seed Grant Initiative to Accelerate Scientific Research 2019-2021
  Investigate electrophysiology of the motor system with invasive and non-invasive recordings.
  Role: PI
- Incubating Interdisciplinary Initiatives (I3) Award 2019-2021
  Physiological Responses to Natural Indoor Animation
  Role: Co-PI
- UC Postdoctoral President's Fellowship 2015-2017
  Support provided for postdoctoral scholar who will contribute to diversity and equal opportunity
  Role: PI
- National Science Foundation GK-12 Fellow 2011-2012
  $30,000 plus student fees.
  Role: PI
- Institute for Neural Computation (NIMH) Pre-doctoral Fellow 2010-2011
  Salary at NIH level, plus student fees.
- National Science Foundation Graduate Research Fellow 2007-2010
  $30,000/year for 3 years, plus student fees.
  Role: PI
- Summer Undergraduate Research Fellowship – Funding for Independent Research 2005
  Role: PI

Awards and Honors

- Second most highly cited recent article from Journal of Neural Engineering 2020
- Manuscript Selected for Cover of Journal of Neurosurgery 2018
- Selected for Press Conference, Society for Neuroscience 2017
- Organization for Human Brain Mapping Merit Abstract Award 2015
- Human Brain Mapping Conference Merit Travel Award 2009
- Finalist for University Medal at UC Berkeley (6 Awarded Across University) 2006
- Departmental Citation, Psychology (1 Awarded for Department) 2006
- Highest Honors in Psychology (for Undergraduate Honors Thesis) 2006
- Highest Distinction in General Scholarship 2006

Publications

[1]Graduate student trained by Swann NC, [2]Undergraduate student trained by Swann NC, [3]Other trainee of Swann NC

- Leriche RB[2], Jackson N[3], Peterson K[2], Aspandiar Z[2], Hufnagel V[2], **Swann NC**. (2022) Reduced sensorimotor beta dynamics could represent a "slowed movement state" in healthy individuals. *Neuropsychologia* 172 (29). 108276.
- Rockhill AP[1], Larson E, Stedelin B, Mantovani A[3], Raslan AM, Gramfort A, **Swann NC**. (2022) Intracranial Electrode Localization and Analysis in MNE-Python. *Journal of Open Science Software.* 7(70), 3897, https://doi.org/10.21105/joss.03897
- Karekal A[1], Miocinovic S, **Swann NC**. (2022). Novel approaches for quantifying beta synchrony in Parkinson's Disease. *Experimental Brain Research*. https://doi.org/10.1007/s00221-022-06308-8
- Cummins DD, Kochanski RB, Gilron R, **Swann NC**, Little S, Hammer L, Starr PA. (2021). Chronic sensing of subthalamic local field potentials: comparison of first and second generation implantable bidirectional systems within a single subject. Frontiers in Neuroscience. *15:725797.* doi: 10.3389/fnins.

- Rockhill AP[1], Raslan AM, **Swann NC**. (2020). Pd-parser: A tool for Matching Photodiode Deflection Events to Time-Stamped Events. *Journal of Open Science Software*. 5(54), 2674, https://doi.org/10.21105/joss.02674
- Jackson N[3], Cole S, Voytek B, **Swann NC**. (2019) Characteristics of Waveform Shape in Parkinson's Disease Detected with Scalp Electroencephalography. *eNeuro*. DOI: https://doi.org/10.1523/ENEURO.0151-19.2019 *This article was selected by the journal as a highlight for the scientific community and press release
- Miller AM, Miocinovic S, **Swann NC**, de Hemptinne C, Ostrem JL, Starr PA. (2019). Effect of levodopa on electroencephalographic biomarkers of the parkinsonian state. *Journal of Neurophysiology.* 22(1):290-299
- Holdgraf C., [and 35 others including **Swann NC**]. (2019) BIDS-iEEG: an extension to the brain imaging data structure (BIDS) specification for human intracranial electrophysiology. *Scientific Data.*6(1):103
- Verbruggen F, [and 42 others, including **Swann NC**]. (2019) Capturing the ability to inhibit actions and impulsive behaviors: A consensus guide to the stop-signal task. *eLife*. eLife 2019;8:e46323.
- **Swann NC,** de Hemptinne C, Thompson M, Miocinovic S, Miller A, Gilron R, Ostrem J, Chizeck H, Starr PA. (2018). Adaptive deep brain stimulation for Parkinson's disease using motor cortex sensing. *Journal of Neural Engineering*. 15(4):-46006
  *This manuscript was selected for a press release by the journal and also featured in several other outlets including the front page of nih.gov
- **Swann NC,** de Hemptinne C, Miocinovic S, Qasim S, Ostrem J, Galifianakis N, San Luciano M, Wang S, Ziman N, Taylor R, Starr PA. (2018). Chronic multisite brain recording from a totally implantable bidirectional neural interface: experience in five patients with Parkinson's disease. *Journal of Neurosurgery.* 14:1-12.
  *This manuscript was highlighted on the cover of the February 2018 issue.
- Miocinovic S, **Swann NC**, de Hemptinne C, Miller AM, Ostrem JL, Starr PA. (2018). Cortical gamma oscillations in isolated dystonia. *Parkinsonism Related Disorders* 49: 104-105.
- Miocinovic S, Miller AM, **Swann NC**, Ostrem JL, Starr PA. (2018). Chronic deep brain stimulation normalizes scalp EEG activity in isolated dystonia. *Clinical Neurophysiology* 129(2):368-376.
- Miocinovic S, Shoeb AH, Wang S, Byrd EA, **Swann NC**, Pathak A, Ostrem JL. (2017). Clinical Tremor Severity Estimation Using an Instrumented Eating Utensil. *Journal of Parkinson's Disease* 7(4)755-759.
- Khanna P, **Swann NC**, de Hemptinne C, Miocinovic S, Miller A, Starr PA, Carmena JM. (2017) Neurofeedback control in Parkinsonian patients using electrocortigraphy signals accessed with a chronic, fully implanted device. *IEEE transactions on neural systems and rehabilitation* 25(10):1715-1724.
- Panov F, Levin E, de Hemptinne C, **Swann NC**, Qasim S, Miocinovic S, Ostrem J, Starr P. (2017) Intraoperative electrocorticography for physiological research in movement disorders: principals and experience in 200 cases. *Journal of Neurosurgery 126*(1):122-131.
- **Swann NC,** de Hemptinne C, Miocinovic S, Qasim S, Wang S, Ziman N, Ostrem J, San Luciano M, Galifianakis N, Starr PA. (2016) Gamma oscillations in the hyperkinetic state detected with chronic human brain recordings in Parkinson's disease. *Journal of Neuroscience 36*(24):6445-58
- **Swann NC**, de Hemptinne C, Maher R, Stapleton C, Meng L, Gelb A, Starr P. (2016) Motor System Interactions in the Beta Band Decrease during Loss of Consciousness. *Journal of Cognitive Neuroscience 28*(1): 84-95.
- Qasim S, de Hemptinne C, **Swann NC**, Miocinovic S, Ostrem J, Starr P. (2016) Electrocorticography reveals desynchronization in the basal ganglia-cortical loop during rest tremor in Parkinson's disease. *Neurobiology of Disease 86*(2016): 177-186.
- Rossi PJ, Gunduz A, Judy J, Wilson L, [and 46 others, including **Swann NC**.] (2016). Proceedings of the Third Annual Deep Brain Stimulation Think Tank: A Review of Emerging Issues and Technologies. *Frontiers in Neuroscience* 6;10:119. doi: 10.3389/fnins.2016.00119. eCollection. Review.
- **Swann NC**, de Hemptinne C, Aron A, Ostrem J, Knight R, MD, Starr P. (2015) Elevated Synchrony in Parkinson's Disease Detected with Electroencephalography. *Annals of Neurology 78*(5), 742-750.
- Rowland NC, de Hemptinne C, **Swann NC,** Qasim S, Miocinovic S, Ostrem J, Knight RT, Starr PA. (2015) Task-related activity in sensorimotor cortex in Parkinson's disease: compensatory changes in beta and gamma bands. *Frontiers in Human Neuroscience 9*,512.
- de Hemptinne C, **Swann NC,** Ostrem J, Ryapolova-Webb E, San Luciano M, Galifianakis NB, Starr P. (2015)

Therapeutic deep brain stimulation reduces cortical phase amplitude coupling in Parkinson's disease. *Nature Neuroscience 18*(5): 77-86.

- **Swann NC,** Tandon N, Pieters TA, Aron AR. (2013) Intracranial Electroencephalography Reveals Different Temporal Patters of Dorsal- and Ventro-lateral Prefrontal Cortex in Preparing to Stop Action. *Cerebral Cortex 23*: 2479-88.
- **Swann NC**, Cai W, Conner RC, Pieters TA, Claffey MP, George JS, Aron AR, Tandon N. (2012) Roles for the presupplementary motor area and the right inferior frontal gyrus in stopping action: electrophysiological responses and functional and structural connectivity. *Neuroimage 5*9: 2860-2870.
- **Swann NC**, Poizner H, Houser M, Gould S, Greenhouse I, Cai W, Strunk J, George J, Aron AR. (2011) Deep brain stimulation of the subthalamic nucleus alters the cortical profile of response inhibition in the beta frequency band: a scalp EEG study in Parkinson's disease. *Journal of Neuroscience 31*: 5721-5729.
- **Swann NC**, Tandon N, Canolty R, Ellmore TM, McEvoy LK, Dreyer S, DiSano M, Aron AR. (2009) Intracranial EEG reveals a time- and frequency-specific role for the right inferior frontal gyrus and primary motor cortex in stopping initiated responses. *Journal of Neuroscience 29*(40): 12675-12685.
- Hales JB, Israel SL, **Swann NC**, Brewer JB. (2009) Dissociation of frontal and medial temporal lobe activity in maintenance and binding of sequentially presented paired associates. *Journal of Cognitive Neuroscience, 21*(7): 1244-1254.

Opinion/Outreach Pieces

[1]Graduate student trained by Swann NC, [2]Undergraduate student trained by Swann NC, [3]Other trainee of Swann NC

- **Swann NC.** (2019) Are we there yet? *eLife,* 2019;8:e49202
- Jackson N[3]. and **Swann NC**. The shape of brain waves recorded from the scalp differentiates Parkinson's disease. *Neuroline Research Summary*. *Neuroline.sfn.org*
- Calisi, [and 44 others, including **Swann NC**.] (2018). The Childcare-Conference Conundrum, and how to solve it. *PNAS.* https://doi.org/10.1073/pnas.1803153115.
- de Hemptinne C and **Swann NC**. (2016). Treating Parkinson's Disease with Brain Controlled Electrical Stimulation. *Frontiers for Young Minds.* 4:10. doi: 10.3389/frym.2016.00010
- **Swann NC** and Greenhouse I. (2014) Stop! How We Inhibit Acts. *Frontiers for Young Minds 2*:7. Doi 10.3389/frym.2014.00007
  *This article was also later re-published in *Scientific American*.

Submitted Manuscripts/Preprints

[1]Graduate student trained by Swann NC, [2]Undergraduate student trained by Swann NC, [3]Other trainee of Swann NC

- Schultz KE[1], Denning D[2], Hufnagel V[2], **Swann NC**. Stopping a Continous Movement: A Novel Approach to Investigating Motor Control. bioRxiv biorxiv.org/content/10.1101/2021.04.08.439070v1(*submitted, in revision*)
- Schultz KE[1], Berkman E, **Swann NC.** Prepared and Reactive Inhibition in Smokers and Non-Smokers. https://psyarxiv.com/9z82r. (*submitted*)
- Dubarry A.,..[26 others including **Swann NC**]. Advances in human intracranial electroencephalography research, guidelines and good practices. (*submitted*).
- Rockhill AP[1], Mantovani A[3], Stedelin B, Raslan AM, **Swann NC**. Classification of movement-related oscillations with machine learning. https://www.biorxiv.org/content/10.1101/2022.03.28.486094v1 (*submitted*)

Book Chapters

- **Swann NC**, Starr, P. (2015) Human and Non-Human Primate Neurophysiology to Understand the Pathophysiology of Movement Disorders. Animal Models of Movement Disorders: Genetics and Models, Second Edition (Mark S. LeDoux ed.) Elsevier.
- Greenhouse I, **Swann NC**, Aron A. (2011) Fronto-basal ganglia circuits for stopping action. In: Neural basis of motivational and cognitive control (Rogier Mars, Jerome Sallet, Matthew Rushworth, Nick Yeung eds.) Cambridge: MIT Press.

Open Access Code

- https://github.com/SwannLab

Patents

- P.A. Starr, **N Swann**, C. de Hemptinne, J. Ostrem. (2018). "Methods and Systems for Treating Neurological Movement Disorders". US Patient Application # 15577681.
- PA Starr, C De Hemptinne, J Ostrem, **N Swann.** (2016). "Methods and Systems for Treating Neurological Movement Disorders". US Patent # 9295838.

Societies and Memberships

- Knight Campus Associate Member — July 2019 - Present
- University of Oregon Institute of Neuroscience Affiliate Member — September 2018 - Present
- Society for Neuroscience — September 2018 - Present

Editorial Boards

- Editorial Board, *Experimental Brain Research*, 2020-present
- Social Media Editor, *Experimental Brain Research*, 2019-present
- Reviewing Editor, *eLife*, 2018-present

Ad Hoc Reviewer for

Journal of Neuroscience • PNAS • Nature Human Behavior • PLOS Computational Biology • eLife • Science Advances • Translational Psychiatry • Cerebral Cortex • Neuroimage • Journal of Neurophysiology • Journal of Cognitive Neuroscience • Frontiers in Cognitive • Frontiers in Human Neuroscience • Behavioral Brain Research • PLOS One • International Journal of Psychophysiology • Journal of Motor Behavior • Psychophysiology • Frontiers in Human Neuroscience • Journal of Neuroscience Methods • Neuroimage Clinical • Brain Stimulation • Journal of Clinical Neurophysiology • Experimental Brain Research • Journal of Neural Engineering • eNeuro

Ad Hoc Grant Reviews

- Wellcome Trust - 2019

Oral Presentations

- Establishing an EEG-based 'biomarker' of Parkinson's disease and impact of movement on these signatures. *UCLA Electrophysiology of Brain Dynamics Affinity Group.* (2022)
- Movement Disorders Data Blitz Contributor. *OHSU Movement Disorder Journal Club* (2020)
- Waveform Shape and Parkinson's disease. *43rd Annual Meeting of the Japan Neuroscience Society.* Kobe Japan. (2020).
- Altered Cortical Electrophysiology in Parkinson's disease. *Pacific Northwest Basal Ganglia Coterie*. Vancouver, Canada. (2020)
- Movement Disorders Data Blitz Contributor. *OHSU Movement Disorder Journal Club* (2019)
- Parkinson's Disease Neurophysiology, Treatments, and Future Directions. *Human Anatomy and Physiology Society Conference.* (2019)
- Abnormal Cortical-Subcortical Electrophysiology in Parkinson's Disease. *Neural Interface Initiative seminar series.* UT Austin. (2019)
- Neurophysiological and Neuromodulator Applications in Parkinson's Disease. *Pacific Northwest Basal Ganglia Coterie*. (2019)
- Signature of Hyperkinetic Movement. *Society for Neuroscience Stopping Workshop*. (2018)
- Customized Treatment for Parkinson's disease: Using Brain Signals to Improve Therapy. *Clinical Research Forum*. (2018)
- Cortical Neurophysiology in Parkinson's Disease. *OHSU Movement Disorder Journal Club.* (2018)
- Motor Neurophysiology. *University of Oregon Institute of Neuroscience Retreat*. (2018)
- Customized Treatment for Parkinson's Disease: Using Brain Signals to Improve Therapy for Parkinson's Disease. *Brain Stimulation Press Conference. Society for Neuroscience*. (2017)
- Neurophysiological Signatures of the Motor System in Health and Disease. *Neurons, Circuits, and Behavior Meeting*. University of Oregon. (2017)
- Neurophysiological Signatures of the Motor System in Parkinson's Disease. *OHSU Movement Disorder Journal Club*. (2017)
- Neurophysiological Signatures of the Motor System in Health and Disease. Invited talk at Georgia Tech. (2017)
- Neurophysiological Signatures of the Motor System in Health and Disease. Invited talk at Emory University. (2017)
- Neurophysiological Signatures of the Motor System in Health and Disease. Invited talk at University of Oregon. (2017)
- Neurophysiological Signatures of the Motor System in Health and Disease. Invited talk at UC Davis. (2017)
- Neurophysiological Signatures of the Motor System in Health and Disease. Invited talk at University of Michigan. (2017)
- Neurophysiological Signatures of the Motor System in Health and Disease. Invited talk at Western University. (2017)
- Neurophysiological Signatures of the Motor System in Health and Disease. UCLA Neurology Grand Rounds. (2017)
- Chronic cortical/subcortical recordings reveal narrowband high frequency oscillation. UCSF Movement Disorders Retreat. (2017)
- Feedback Controlled DBS in Parkinson's Disease. Center for Neural Engineering and Prostheses Annual Retreat. (2016)

- Cortical-Basal Ganglia Oscillations in the Motor System and Movement Disorders. UC Davis Neurology Grand Rounds. (2016)
- Cortical-Basal Ganglia Oscillations in the Motor System and Movement Disorders. UC President's Postdoctoral Retreat. (2016)
- Chronic Cortical and Subcortical Recordings Reveal a Narrowband High Frequency Oscillation During Dyskinesia. Center for Neural Engineering and Prostheses Annual Retreat. (2015)
- Chronic Cortical and Subcortical Recordings Reveal Narrowband 70 Hz Activity During Dyskinesia. Human Brain Mapping. (2015)
- Basal Ganglia-Thalamo-Cortical interactions in the motor system and movement disorders. UC Santa Cruz Neuroclub. (2015)
- Long Term Cortical and Subcortical Recordings in Parkinson's Disease Patients Using a Totally Implantable Device. DBS Think Tank. (2015)
- Long Term Cortical and Subcortical Recordings in Parkinson's Disease Patients Using a Totally Implantable Device. Center For Neural Engineering and Prosthesis Annual Retreat. (2014)
- Long Term Cortical and Subcortical Recordings in Parkinson's Disease Patients Using a Totally Implantable Device. Bay Area Basal Ganglia Dinner. (2014)
- Abnormal Cortical Synchronization Patterns in Parkinson's Disease. Center For Neural Engineering and Prosthesis Annual Retreat. (2013)
- The Spatio-temporal Dynamics of a Neural Network for Response Control. UCSD Neuroscience Retreat. (2012)
- Deep brain stimulation of the subthalamic nucleus alters the cortical profile of response inhibition in the beta frequency band: a scalp EEG study in Parkinson's disease. Institute for Neural Computation Retreat. (2011)
- Deep brain stimulation of the subthalamic nucleus alters the cortical profile of response inhibition in the beta frequency band: a scalp EEG study in Parkinson's disease. Society for Neuroscience. (2010)
- The temporal dynamics of a fronto-basal-ganglia circuit for stopping action. UCSD Cognitive-Neural Systems brownbag. (2010).
- Intracranial EEG shows primary motor and prefrontal signatures of stop signal response inhibition. Human Brain Mapping. (2009)
- An intracranial EEG study of stopping initiated action. UCSD Cognitive Neuroscience brownbag. (2009)

Declined/Cancelled Oral Presentations Due to Covid-19, Travel Concerns Related to Climate Change, and/or Family/Health Considerations

- OHSU Movement disorders Journal Club (2021)
- Pacific Northwest Basal Ganglia Coterie. (2021)
- Control Signals and Engineering Challenges of Deep Brain Stimulation (DBS) for Movement Disorders. North American Neuromodulation Society. (2021)
- ECoG vs LFPs for Closing the Deep Brain Stimulation Loop. North American Neuromodulation Society. (2020)
- Pacific Northwest Basal Ganglia Coterie. (2018)
- Neurophysiological Signatures of the Motor System in Health and Disease. UC Riverside. (2016).

Press

- Neuroscience on the Rise – Oregon Quarterly 2021
- UO, PeaceHealth partner on national mental health initiative – *Around the O* 2020
- Noninvasive Electrophysiological Biomarker for Parkinson's Disease – *Neuroline June Roundup* 2019

- Jackson et al 2019, eNeuro featured on Society for Neuroscience Homepage 2019
- UO-led study finds angles in raw EEG data point to Parkinson's – *Around the O* 2019
- Noninvasive biomarker for Parkinson's disease possibly found in EEG data – *UO News Release* 2019
- Noninvasive Electrophysiological Biomarker for Parkinson's Disease – *eNeuro press release* 2019
- Featured in Parkinson's Resource of Oregon Newsletter 2019
- Adaptive deep brain stimulation for Parkinson's disease – *NIH Research Matters* 2018
- Self-tuning brain implant could help treat patients with Parkinson's disease – *NIH.gov* 2018
- UO researcher has eyes on future treatments of Parkinson's disease – *Around the O* 2018
- Adaptive Deep Brain Stimulation For Parkinson's - *Reliawire* 2018
- DBS implant adapts to patient's neural signals – *Medical Physics Web* 2018
- Parkinson's implant uses brain's signals to adapt treatment – *Journal of Neural Engineering Press release* 2018
- Early career researchers face a childcare-conference conundrum – *Around the O* 2018
- Expert Consultant for piece in *Quanta Magazine* 2018
- NCTalks at SfN17: Nicole Swann on adaptive DBS and Parkinson's disease. *Neurocentral* 2017
- Advances in Brain Stimulation: Transforming how Neuroscientists Study the Brain: *Technology Networks* 2017
- Adaptive DBS May Offer Better PD Treatment Option. *MedPage Today*. 2017

Conference Abstracts

[1]Graduate Student, [2]Undergraduate student, or other [3]Trainee of Swann NC

- Hawong, HY., Chung K., **Swann NC**. Electrophysiology marker of levodopa induced dyskinesia in Parkinson's Disease (PD). International congress of Parkinson's disease and movement disorders. 2022, Sept; *submitted.*
- Mantovani A[3], Rockhill AP[1], Stedelin BA, **Swann NC**, Raslan AM,. Classification of Movement-Related Oscillations Using Machine Learning. 2021 Congress of Neurological Surgeons Meeting. Austin, TX. October 16-20, 2021.
- Schultz KE[1], Denning D[2], Peterson K[2], Johnson A[2], Hufnagel V[2], **Swann NC**. A Novel Task for Probing Inhibitory Control. Society for Neuroscience 2019.
- Leriche RB[2], Jackson N[3], Peterson K[2], Aspandiar Z[2], Hugnagel V[2], **Swann NC**. Effects of inter-stimulus interval duration and predictability on sensorimotor beta. Society for Neuroscience 2019.
- Case M, Bronte-Stewart H, Kuehn A, Boetzel K, Hebb A, Starr P, Klassen B, Ince N, Blumenfeld, Neumann J, Hell F, Hanrahan S, **Swann NC**, Ozturk M, Stanslaski S, Vasoli V, Xiao J, Goetz S, Denison T, Raike R. A Retrospective Analysis of Multicenter Chronic Brain Signal Data Recorded in Parkinson Subjects. North American Neuromodulation Society 2019.
- Jackson N[3], Cole S, Voytek B, **Swann NC.** Characteristics of beta waveform shape in Parkinson's disease detected with scalp electroencephalography. Society for Neuroscience 2018.
- **Swann NC**, de Hemptinne C, Thompson M, Miocinovic S, Miller A, Gilron R, Ostrem J, Chizeck H and Starr P. Closed loop deep brain stimulation for dyskinesia control in Parkinson's disease. Society for Neuroscience 2017.
- **Swann NC**, de Hemptinne, Miller A, Chen W, Tamir I, Gilron R, Ostrem J, Starr P. Feedback Controlled DBS in Parkinson's Disease using Electrocorticography. Movement Disorders Society 2017.
- **Swann NC,** de Hemptinne C, Miocinovic S, Qasim S, Ostrem J, Galifianakis N, San Luciano M, Wang S, Taylor R, Starr PA. Dyskinesia Occurring with by Dopaminergic Medication or DBS are Associated with a Narrowband High Frequency Oscillation in Human Chronic Cortical and Subcortical Recordings. Society for Neuroscience 2015.
- **Swann NC**, de Hemptinne D, Miocinovic S, Qasim S, Wang S, Ziman N, Ostrem J, San Luciano M, Galifianakis N Starr P. Chronic Cortical and Subcortical Recordings Reveal Narrowband 70 Hz Activity During Dyskinesia. Human Brain Mapping 2015.

- **Swann NC**, de Hemptinne, Ostrem J, Knight RT, Starr PA. Phase Amplitude Coupling in Parkinson's Disease Detected with Scalp Electroencephalography. Society for Neuroscience 2014.
- de Hemptinne*, **Swann N***, Miocinovic S, Qasim S, Wang S, Ziman N, Ostrem J, San Luciano M, Galifianakis N, Starr P. Long Term Cortical and Subcortical Recordings in Parkinson's Disease Patients Using a Totally Implantable Device. Society for Neuroscience 2014. *Authors contributed equally
- **Swann NC**, de Hemptinne C, Ostrem J, San Luciano M, Starr P. Chronic Cortical and Subcortical Recordings in Parkinson's Disease using a totally implanted bidirectional neural interface. Movement Disorders Society 2014.
- **Swann NC**, de Hemptinne C, Ryapolova-Webb E, Ostrem J, Starr P. Synchronization of globus pallidus neurons to cortical oscillatory activity in humans with Parkinson's disease and primary dystonia. Society for Neuroscience 2013.
- **Swann N**, De Hemptinne C, Maher R, Stepleton C, Maties O, Meng L, Gelb A, and Starr P. Patterns of cortical and subcortical activity and connectivity during propofol induction. Society for Neuroscience in Anesthesiology and Critical Care 2013.
- **Swann NC**, Cai W, Pieters T, Claffey M, George J, Conners C, DiSano M, Aron A, Tandon N. Roles for the presupplementary motor area and the right inferior frontal gyrus in stopping action: electrophysiological responses and functional and structural connectivity. Society Neuroscience 2011.
- Cai W*, **Swann N*,** Tandon N, Claffey M, Verbruggen F, Pieters T, Aron AR. Preparing to stop yourself: Functional MRI and ECoG reveal brain network, timing and frequency band. Human Brain Mapping 2010. *Authors contributed equally.
- Mullen T*, **Swann N*,** Tandon N, Ellmore T, DiSano M, Dreyer S, Aron AR. Using Granger Causal techniques and intracranial EEG to examine directed information flow in a cortical network for stopping action. Society for Neuroscience 2009. *Authors contributed equally.
- **Swann NC**, Tandon N, Canolty RT, Ellmore TM, McEvoy LK, DiSano M, Dreyer S, Aron A . Intracranial EEG shows primary motor and prefrontal signatures of stop signal response inhibition. Human Brain Mapping 2009.
- **Swann NC**, Tandon N, Canolty RT, Ellmore TM,, DiSano M, Dreyer S, Aron A. An intracranial EEG study of response inhibition. Society for Neuroscience 2008.
- **Swann NC**, Onton J, Makeig S, Aron A. "A high density EEG study of right Inferior Frontal Cortical responses to Stopping and Going" Cognitive Neuroscience Society 2008.
- Hales J, Israel S, **Swann NC**, Brewer J. Medial-temporal-lobe contribution to associative memory formation: Examination of BOLD response during association of sequentially presented items. Society Neuroscience 2007.
- Fuhrmann Alpert G, Oga T, **Swann NC**, Voytek B, Knight RT, Increased Motor Network g-Band Coherence During Movement Preparation Predicts Short Reaction Times: an EEG Study. Society for Neuroscience 2005.
- Oga. T., Fuhrman, G., Canolty, R.T., **Swann, N.C.,** Chung, A., Mima, T. and Knight, R.T. Coherent alpha and beta oscillations between supplementary and primary motor areas during motor preparation. Society for Neuroscience 2004.

Teaching

- Human Physiology 211 *Medical Terminology (Online)* – Instructor — Spring 2020
- Human Physiology 410/510. *Clinical Neuroscience* – Instructor — Winter 2020
- Human Physiology 211 *Medical Terminology* – Instructor — Spring 2019
- Human Physiology 410/510. *Clinical Neuroscience* – Instructor — Winter 2019
- Human Physiology 211 *Medical Terminology* – Instructor — Spring 2018

Current Mentorship

- Undergraduate Research Assistants: Kenzie Carnes, Bradley Dribble, Pippa Simmons, and Grace Fekete 2022-present
- Hae-young Hawong, OHSU Movement Disorders Fellow (*mentor for research*) 2021-present
- Alessandra Mantovani, OHSU Neurosurgical Resident (*co-mentor for research year*) 2020-present
- Apoorva Karekal 2020-present
- Alex Rockhill, PhD student 2019-present
- Kelsey Schultz, PhD student 2018-present
- Undergraduate Research Assistants: Carey Parker, 2020-present
- Research Assistant/Laboratory Manager: Ryan Leriche[a] 2017-present

[a]*OURS recipient*

Past Mentorship

- Ajay Agarwal[a] 2020-2021
- Ryan Leriche: Undergraduate Honors Thesis 2017-2021
  Title: Understanding How Electrical Brain Waves Modulate with Movement Speed and Uncertainty
- Vanessa Hufnagel: Undergraduate Honors thesis 2017-2020
  Title: Electrophysiological Patterns of Skilled and Unskilled Motor Movements
- Zeeya Aspandiar: Undergraduate Honors thesis 2017-2019
  Title: Corticomuscular coherence of the extensor carpi radialis muscle in a dynamic response task
- Audrey Quinn, ESPRIT Scholar 2020-2021
- David McNeely, Knight Campus Undergraduate Scholar 2019-2021
- Dominique Denning, Undergraduate Research Assistant 2018-2021
- Chase Craig , Undergraduate Research Assistant 2019-2020
- Sarita George , Undergraduate Research Assistant 2019-2020
- Anna Johnson, Undergraduate Research Assistant 2018-2019
- Isa Richter, Undergrad Research Assistant 2017-2019
- Nicholas Jackson, BS: Lab Manager/Research Assistant 2017-2019
- Irene Guzman, Research Assistant 2018-2019
- Andrew Miller, BS: Lab Manager/Research Assistant in Postdoctoral Laboratory 2015-2017
- Witney Chen, BS: Graduate Student in Postdoctoral Laboratory 2015-2017
- Kate Derosier BS: Rotation Graduate Student in Postdoctoral Laboratory 2015
- Jonathan Strunk: Undergraduate Research Assistant in Thesis Laboratory 2010-2012

[a]*OURS recipient*

Student Awards or Fellowships

- Ursula (Sue) Moshberger Scholarship [to mentee: Apoorva Karekal] 2022
- General University Scholarship [to mentee: Alex Rockhill] 2021
- Honorable Mention in Physiology Category for poster at University of Oregon Undergraduate Research Symposium [to mentee: Ryan Leriche] 2021
- UOWGS Science Slam Most Informative Award [to mentee: Apoorva Karekal] 2021
- OURS – SPUR fellowship [to mentee: Ajay Agarwal] 2021
- General University Scholarship [to mentee: Alex Rockhill] 2020
- Honorable Mention in Physiology Category for poster at University of Oregon Undergraduate Research Symposium [two awards given to mentees: Dominique Denning and Vanessa Hufnagel] 2020

- Special Opps Travel and Research Award [to mentee: Alex Rockhill] 2020
- NSF GRFP Honorable Mention [to mentee: Alex Rockhill] 2020
- Shapiro Family Scholarship Award [to mentee: Alex Rockhill] 2020
- University of Oregon Lokey Graduate Science Award [to mentee: Alex Rockhill] 2020
- Knight Campus Undergraduate Scholars Program [to mentees: David McNeely and Kelsey Schultz] 2020
- Summer Program for Undergraduate Research NIH R25 Travel Award [to mentee: Ryan Leriche] 2019
- OURS – SPUR fellowship [to mentee: Ryan Leriche] 2019
- Miller Family Graduate Award in Technology and Science [to mentee: Kelsey Schultz] 2018-2019
- UO Women in Graduate Studies Summer Undergraduate Research Award [to mentee: Zeeya Aspandiar] 2018

Student Oral Presentations

- Leriche, Ryan (2021). Brain oscillations may represent a continuum from healthy to impaired movement speed. University of Oregon Undergraduate Research Symposium.
- Karekal, Apoorva (2021). UOWGS Science Slam.
- Hufnagel, Vanessa (2020). Electrophysiological Patterns of Skilled Motor Movements. University of Oregon Undergraduate Research Symposium.
- Denning, Dominique (2020). Comparison of Stop-Signal and Continuous Movement Reaction Stop Times to Measure Inhibitory Control. University of Oregon Undergraduate Research Symposium.
- Leriche, Ryan (2020). Electrical Brain Waves Modulate with Movement Speed and Uncertainty. University of Oregon Undergraduate Research Symposium.
- Karekal, Apoorva (2021). UOWGS Science Slam.
- Leriche, Ryan (2019). Effects of inter-stimulus interval predictability on sensorimotor beta. University of Oregon Undergraduate Research Symposium.

Student Committees

- Erika Moe – HPHY representative for Honor's Thesis (HPHY) 2021-present
- Mitchell Fischer - Member of Thesis Committee (HPHY) 2019-present
- Issac Gomez – Member of Master's Committee (HPHY) 2019-present
- Kate Spitzley – Member of Thesis Committee (HPHY) 2019-present
- Chris Horton – Member of Undergraduate Honors Thesis Committee (HPHY) 2019
- Ryan Leriche – Honor's Thesis Mentor (HPHY/BIO) 2018-present
- Kelsey Schultz –Thesis Committee Mentor (BIO) 2018-present
- Seth Donahue – Member of Thesis Committee (HPHY) 2018-present
- Marike Reimer – Member of Comprehensive Exam Committee (BIO) 2018-2019
- Zeeya Aspandiar – Honor's Thesis Mentor (HPHY) 2018-2019
- Emily Howlett – Member of Undergraduate Honors Thesis Committee (HPHY) 2018

Departmental Committees

- Undergraduate Program Committee 2019-current
- Diversity, Equity, and Inclusion Departmental Committee 2018-current

- Departmental Search Committee 2018-2019

Departmental Service

- Virtual SAIL (Summer Academy to Inspire Learning) participant (organized lab members) 2020
- Task force member to draft department mission statement 2019
- Researcher Speaker for in HPHY 212 [presented lab goals] 2019
- Presented "Active Learning" Demo for HPHY Teaching Academy 2019
- HPHY Graduate Student CV workshop– panelist 2019
- EEG demo for SAIL (Summer Academy to Inspire Learning) program 2019
- Faculty Speaker at HPHY Undergraduate Research Presentation 2018
- Lab tour/demo for Summer Academy to Inspire Learning (SAIL) program 2018
- Presenter at National Biomechanics Day 2018
- Judge for HPHY 371 poster session 2017, 2018

University Service

- Faculty Research Commission Member 2020
- "Paging Dr. Darwin" - FIG laboratory tour 2019
- Lunch Attendee for North Star Project Summer Program 2019
- Speaker for OURS/SPUR program 2019
- Member of working family caucus – United Academics 2018-current
- Judge for Women in Neuroscience Travel Awards 2019
- Speaker for ION graduate recruitment 2018, 2019
- Attendee of Rehearsals for Life Workshop 2019
- Faculty attendee at Sunday pancake breakfast in UO residence hall 2019
- Speaker for Undergraduate Health Science Residence Community 2019
- Featured in UO STEM viewbook 2018
- Interviewed for "*Art of Argument*" – Around the O 2018
- Interviewed Candidates for Directory of Strategic Research Initiatives 2018
- Interviewed Candidates for ION/Biology Faculty position 2018
- Part of Women in Science Panel - fundraiser for 500 Women Scientists (organized by UO students) 2018
- Human Physiology Department Representative at UO Football Recruitment Breakfast 2018
- Attendant of Clinical Research Forum Meeting 2017, 2018
- UO Women in Graduate Studies Generation Luncheon – attendee 2018
- Lab Tour for Churchill High School 2018
- Resistance 101: Allyship Training Program 2018
- University of Oregon DREAMer Ally Training Program 2017

Outreach Outside of University

- Guest on The Voice of Islam Breakfast Show 2022

- Speaker for Neurology Research Group – American University of Antigua Medial School 2020
- Speaker on Roscoe's Wetsuit Neuro-podcase 2020
- 500 Women Scientists – Member 2019-current
- Skype a Scientist – Scientist Participant 2018
- Speaker at Eugene/Springfield Parkinson's Disease Support Group 2018
- Activa PC+S Results Patient Presentation (for patients in our study) 2015, 2017
- Frontiers for Young Minds Live Review. Scientist. 2015
- Summer Math & Science Honors Academy (through Level Playing Field Institute). Project leader. 2014
  Met with students twice a week to help lead them through the design, implementation and manuscript preparation of their own experiment.
- Frontiers for Young Minds. Contributor. 2014-2015
  Wrote articles for open access journal for kids, reviewed by kids.
- Bay Area Science Festival. Volunteer. 2013-2014
- Madera Elementary School Science Fair Judge 2013-2015
- UCSF Science Education Partnership Scientist. 2013-2014
  Partnered with elementary school teacher to develop and present several interactive science labs.
- UCSF GK-12 Fellow 2011-2012
  Partnered with high school teacher to help develop and teach science curriculum (integrating current discoveries). Visited the classroom weekly for entire school year.
- Neuroscience Outreach Volunteer 2007-2012
  Visited local middle and elementary schools and presented modules to students multiple times a year.
- San Diego Science Festival Volunteer 2011-2012

Professional Development

- Tenure workshop/Q and A 2018
- Participant in UO Faculty Organizing for Success Program 2017-current
- Scientific Leadership and Management Course 2014-2015
- Participant in UC Berkeley's "Mining and Modeling Neuroscience Data" Course 2013
- Participant in Advanced Neuroimaging Summer School at UCLA 2009