STEPHANIE R. JONES, PHD
Professor
Department of Neuroscience, Brown University
https://sites.brown.edu/stephanie-r-jones-lab/
Twitter: @drjstephjones @HNNsolver

EDUCATION

Undergraduate:	BA, Mathematics (Computer Science minor), *Magna Cum Laude*
1993	Boston College, Chestnut Hill, MA
Graduate:	MA, Mathematics
1995	Boston College, Chestnut Hill, MA
2001	PhD, Mathematics Disciplines: Dynamical Systems Theory and Computational Neuroscience Advisor: Nancy Kopell, Boston University, Boston, MA
Research Fellow:	Training in Neuroscience & Human Neurophysiology (MEG/EEG)
2001-2005	Athinola A. Martinos Center for Biomedical Imaging Massachusetts General Hospital / Harvard Medical School, Boston, MA

PROFESSIONAL APPOINTMENTS

2005-2011	Faculty, Harvard Medical School, Boston, MA
2005-2013	Assistant in Neuroscience, Martinos Center Mass. General Hosp., Boston, MA
2011-2013	Associate Scientist, Newborn Medicine Boston Children's Hospital, Boston, MA
2011-2016	Assistant Research Professor, Brown University, Providence, RI
2016-2018	Associate Research Professor, Brown University, Providence, RI
2018-2023	Associate Professor, Brown University, Providence, RI
2016-present	Computational Neuroscientist, CfNN, Providence Veteran's Medical Center, RI
2023-present	Professor Brown University, Providence, RI

HONORS and AWARDS

1993	Alfred A. Bennet Excellence in Mathematics Teaching Award, Boston College
1993	Phi Beta Kappa, National Honor Society, Boston College
1993-1995	Dean's Fellowship, Dept. of Mathematics, Boston College
2008	Claflin Distinguished Scholar Award, Harvard Medical School
2011	Scholars in Medicine Dr. Lynne Reid /Shore Fellowship, Harvard Medical School
2012	Harvard Catalyst Advanced Imaging Award, Harvard Translational Science Center
2012 & 2013	New Frontiers Award, Brown Univ. / Norman Prince Neuroscience Institute
2014	Dean's Emerging Areas of New Science (DEANS) Award, Brown Univ. BioMed
2016	NIH BRAIN Initiative Award
2019	Open-Source Technology Event SFN: Best Speed Dating Demonstration
2020	BIOMAG 2020 Mid-Career Award, Society for Biomagnetism
2022	Zimmerman Innovation Award, Carney Institute for Brain Science, Brown Univ.
2023	MIT/Brown Faculty Founders Competition Award

ADMINISTRATIVE and SCIENTIFIC LEADERSHIP POSITIONS (past 5 years)

2018	Panel Advisor in Advisory Committee to NIH Director Workshop for BRAIN Initiative Focus Area: "From Experiments to Theory and Back", Houston, TX
2019	Co-editor: Frontiers Special Issue "Biomarkers of Neurodevelopment Disorders"
2021	Panel Advisor in NIH Workshop: BRAIN InitiativeTransformative Non-Invasive Imaging Technology, Online
2021	Steering Committee: Brown U. Medical School Umbrella PhD Program
2021	Steering Committee: Brown U. Interdisciplinary Training in Comp. Neuroscience
2018-present	Director of Core for Decoding, Recording and Computational Neurosci. CfNN, Providence VA Medical Center
2019-present	Undergraduate Advisor Brown University Academic Advising
2019-present	Science Advisory Board: European R.C. Project: ConnectToBrain
2019-present	Science Advisory Board: Neuroelectromagnetic Data Archive & Tools Resource
2019-present	Science Advisory Board: Neuroscience Gateway Portal
2021-present	Science Advisory Board: National Fragile X Center, Cincinnati Children's Hospital
2021-present	Dept. of Neuroscience Committee for Academic Reappointments & Promotions
2022-present	Dept. of Neuroscience First Year Graduate Student Advisor
2022	Co-editor: Frontiers Special Issue "Understanding the Importance of Oscillatory Events: Methods, Characteristics and their Role in Information Coding "
2022	Brown University Neuroscience Graduate Program Admissions Committee
2023-present	Science Advisory Board: NIMH CONTE Center: The Cognitive Thalamus

GRANT REVIEW PANEL MEMERSHIP (past 5 years)

2018	Canadian College Review: Canadian Research Chairs Reviewer
2019	NIH Review Panel: "Computational Approaches for Validating Dimensional Constructs of Relevance to Psychopathology"
2019	NIH Review Panel: Biobehavioral Awards for Innovative New Scientists
2021	NIH: U19 From Genomic Association to Causation
2022	Medical Res. Council: Japan UK Research Collaboration in Neuroscience
2022	Carney Institute Innovator Award Review Committee
2023	NIH Review Panel: Integration and Analysis of BRAIN Initiative Data

CONFERENCE and SYMPOSSIUM ORGANIZATION (past 5 years)

2018	**Symposium Co-Organizer** "Bench to Bedside Seminar Series", Department of Neuroscience, Brown University, Providence, RI
2019-2022	**Conference Organization Scientific Committee** International Conference on Biomagnetism (BIOMAG), Birmingham UK
2021-2022	**Conference Series Co-Organizer** Catherine Kerr Vital Energy in Health and Healing Series, Online
2022-2023	**Summer Workshop Co-Organizer** Joint Brown University and Ben Gurion University summer workshop on Neurotechnology, In Person Ben Gurion, Isreal

CURRENT RESEARCH GRANTS (completed grants listed below after software contributions)

Current Grants as Principal Investigator or Co-Investigator

2023-2028 **R25 NS130655 | NINDS Brown University Summer Scholars Program in Computational Brain Science**
Role: PI (Co-PIs: Webster & Ritt)

2023- 2028 **U24 NS129945 | NINDS**
Role: PI
Dissemination of the Human Neocortical Neurosolver software for circuit level interpretation of human MEG/EEG

2023-2028 **P50 MH109429| NIMH**
Role: Project Leader (Center PIs Schroder & Milham)
CONTE Center: Neurobiology and cognitive role of slow brain network fluctuations

2023-2026 **R01 HD108222 | NICHD**
Role: Co-I (PI E. Pedapati, Cincinnati Children's Hosp.)
Perturbation of neurodynamics underlying sensory hyperarousal and statistical earning in youth with FXS

2022-2025 **UG3 EB034696 | NIBIB**
Role: Co-I (PI G. Xiao)
Development of Quantum Magnetic Tunneling Junction Sensor Arrays for Brain Magnetoencephalography under Natural Settings

2021-2024 **R01 MH130415 | NIMH**
Role: PI
Secondary analysis of resting state MEG data using the Human Neocortical Neurosolver software tool for cellular and circuit-level interpretation

R01 AG076227 | NIA
Role: PI (Co-PI: F. Maestu, Complutense U. Madrid)
CRCNS: US-Spain Research Proposal: Interpreting MEG Biomarkers of Alzheimer's Progression with Human Neocortical Neurosolver

2023-2024 **MIT/Brown Faculty Founders Competition Award**
Role: PI
Innovations in Neurotechnology

2017 – 2024 **Berkman-Landis Family Fund Gift**
Role: PI in stewardship for late Dr. Catherine Kerr
Supporting Research in Patient Healing, Self Efficacy, and Vitality

Current Grants as Mentor or Trainer

2022-2027 **NIH: R35 Advancing the Research Careers of Women & PEERs in Brain Science**
Role: Quantitative Methods Consultant (PI: Lipscome)

2021-2026 **NIH: K23 Mentored Patient-Oriented Research Career**
Role: Co-Mentor (PI. B. Kavanaugh**)**

2020-2025 **NIH: K23 Mentored Patient-Oriented Research Career**
Role: Co-Mentor (PI. L. Korthauer)

2019-present **NIH: Brown Postdoctoral Training Program in Computational Psychiatry**
Role: Trainer (PI: Frank/Serre/Rasmussen)

2012-present **NIH: T32 Training Program in Interactionist Cognitive Neuroscience**
Role: Trainer (PI: Moore/Frank/Badre)

NIH: T32 Training in Neuroscience
Role: Trainer (PI: Lipscome/Sheinberg)

RESEARCH

Journal Articles (reverse chronological)

A full list of my journal publications can be found at
https://scholar.google.com/citations?hl=en&user=H2lcpR0AAAAJ&view_op=list_works&sortby=pubdate

1. Tolley N, Rodrigues PLC, Gramfort A, **Jones SR** (2024) Methods and considerations for estimating parameters in detailed neural models with simulation-based inference. Plos Comp. Biol. In press.
2. Thorpe RV, Black CJ, Borton DA, Hu L, Saab CY, **Jones SR** (2024) Distinct neocortical mechanisms underlie human SI responses to median nerve and laser evoked peripheral activation. Imaging Neuroscience. 2:1–29.
3. Mainak Jas, Ryan Thorpe, Nicholas Tolley, Christopher Bailey, Steven Brandt, Blake Caldwell, Huzi Cheng, Dylan Daniels, … **Jones SR** (2023) HNN-core: A python software for cellular and circuit-level interpretation of human MEG/EEG Journal of Open-Source Software 8 (92), 5848
4. Kavanaugh BC, Fukuda AM, Gemelli ZT, Thorpe R, Tirrell E, Vigne M, ... **Jones SR** (2023) Pre-treatment frontal beta events are associated with executive dysfunction improvement after repetitive transcranial magnetic stimulation for depression: A preliminary Report Journal of Psychiatric Research 168, 71-81
5. Diesburg DA, Wessel JR**, Jones SR** (2023) Biophysical modeling of frontocentral ERP generation links circuit-level mechanisms of action-stopping to a behavioral race model bioRxiv
6. SD McKeon, F Calabro, RV Thorpe, A de la Fuente, W Foran, AC Parr, ... **Jones SR** (2023) Age-related differences in transient gamma band activity during working memory maintenance through adolescence NeuroImage 274, 120112
7. CS Zimmerman, S Temereanca, D Daniels, C Penner, T Cannonier, ...**Jones SR** (2023) A Randomized Controlled Pilot Trial Comparing Effects of Qigong and Exercise/Nutrition Training on Fatigue and Other Outcomes in Female Cancer Survivors Integrative Cancer Therapies 22, 15347354231162584
8. Morris S, Temereanca S, Zandvakili A, Thorpe, R, Sliva D, Greenberg BD, Carpenter LL, Philip NS, **Jones SR** (2023) Fronto-central resting-state 15-29Hz transient beta event features change with therapeutic transcranial magnetic stimulation for posttraumatic stress disorder and major depressive disorder. Scientific Reports, 2023; 13 (1), 6366
9. Zimmerman C, Temereanca S, Daniels D, Penner C, Cannonier T, **Jones SR** and Kerr C[+] (2022) The Vitality Project: A Randomized Control Trial Comparing Qigong and Exercise/Nutrition Training on Fatigue, Emotional Health, and Stress in Fatigued Female Cancer Survivors. Journal of Integrative Cancer Therapies. 2023 15347354231162584
   [+] In memorium of Catherine Kerr
   ** Co-Senior author
10. Neymotin S, Tal I, Barczak A, O'Connell M, McGinnis T, Markowitz N, Espinal E, Griffith E, Anwar H, Dura-Bernal S, Schroeder C, Lytton W, **Jones SR**, Bickel S, Lakatos P (2022) Detecting spontaneous neural oscillation events in primary auditory cortex. eNeuro ENEURO.0281-21.2022.doi: 10.1523/ENEURO.0281-21.2022.
11. Moolchand P, **Jones SR**** and Frank MJ (2022) Biophysical and Architectural Mechanisms of Subthalamic Theta under Response Conflict. J. Neuroscience 10.1523/JNEUROSCI.2433-19.2022 https://doi.org/10.1523/JNEUROSCI.2433-19.2022
    ** Co-Senior author, senior contribution on computational neural modeling component

12. Thorpe RV, Black CJ, Borton DA, Hu L, Saab, CY Jones SR Distinct neocortical mechanisms underlie human SI responses to median nerve and laser evoked peripheral activation. (2021) bioRxiv https://doi.org/10.1101/2021.10.11.463545
13. Bonaiuto JJ, Little S, Neymotin SA, **Jones SR**, R Barnes GR, Bestmann S (2021) Laminar dynamics of beta bursts in human motor cortex. Neuroimage 242:118479. https://doi.org/10.1016/j.neuroimage.2021.118479 .

    ** Senior author contribution on computational neural modeling component
14. Law RG, Pugliese S, Shin H, Sliva DD, Lee S, Neymotin SA, Moore CI, **Jones SR** (2021) Thalamocortical mechanisms regulating the relationship between transient beta events and human tactile perception. Cerebral Cortex, 00:1-21, doi: https://doi.org/10.1093/cercor/bhab221
15. Jas M, **Jones SR**, Hämäläinen MS (2021) Whole-head OPM-MEG enables noninvasive assessment of functional connectivity. Trends in Neurosciences ISSN 0166-2236. doi.org/10.1016/j.tins.2021.04.006.
16. Kohl C, Parviainen T & **Jones, SR** (2021) Neural Mechanisms Underlying Human Auditory Evoked Responses Revealed By Human Neocortical Neurosolver. Brain Topogr. https://doi.org/10.1007/s10548-021-00838-0
17. Powell M, Anso J, Gilron R, Provenza N, Allawala A, Silva D, Bijanki K, Oswalt D, Adkinson J, Pouratian N, Sheth S, Goodman W, **Jones SR**, Starr PA, Borton D (2020) NeuroDAC: An open-source arbitrary biosignal waveform generator. J Neural Eng. Nov 5:10.1088/1741-2552/abc7f0. doi: 10.1088/1741-2552/abc7f0. Epub ahead of print. PMID: 33152715; PMCID: PMC8096859.
18. Levitt J, Edhi MM, Thorpe RV, Leung JW, Michishita M, Koyama S, Yoshikawa SScarfo KA, Carayannopoulos AG Gu W, Srivastava KH, Clark BA, Rosana Esteller R, Borton DA, **Jones SR**, Saab CY (2020) Pain phenotypes classified by machine learning using electroencephalography features. NeuroImage, Volume 223, 117256. ISSN 1053-8119. doi.org/10.1016/j.neuroimage.2020.117256.

    ** Senior author contribution on computational methods
19. Eaton E, Swearingen HR, Zand Vakili A, **Jones SR,** Greenberg BD (2020) A Brief Report on an 8-Week Course of Mindfulness-based Care for Chronic Pain in the Treatment of Veterans With Back Pain. Medical Care: September 2020 - Volume 58 - Issue - p S94-S100. doi: 10.1097/MLR.0000000000001377
20. Sliva DD and **Jones SR** (2020) Is Alpha Asymmetry a Byproduct or Cause of Spatial Attention? New Evidence Alpha Neurofeedback Controls Measures of Spatial Attention. Neuron. Volume 105, Issue 3, Pages 404-406, ISSN 0896-6273. doi.org/10.1016/j.neuron.2019.12.033.
21. Sahin M, Sweeney JA, **Jones SR** (2020) Editorial: Biomarkers to Enable Therapeutics Development in Neurodevelopmental Disorders. Frontiers in Integrative Neuroscience, vol. 14, p. 57, 2020, doi: 10.3389/fnint.2020.616641.
22. Neymotin SA, Daniels DS, Caldwell B, McDougal RA, Carnevale NT, Jas M, Moore CI, Hines ML, Hämäläinen M, **Jones SR** (2020) Human Neocortical Neurosolver (HNN), a new software tool for interpreting the cellular and network origin of human MEG/EEG data. eLife 2020;9:e51214 DOI: 10.7554/eLife.51214 (https://doi.org/10.7554/eLife.51214)
23. Zandvakili A, Philip NS, **Jones SR**, Tyrka AR, Greenberg BD, Carpenter LL (2019) Use of Machine Learning in Predicting Clinical Response to Transcranial Magnetic Stimulation in comorbid Posttraumatic Stress Disorder and Major Depression: A Resting State Electroencephalography Study. J. Affective Disorders. 2019: 252:47-54. doi: 10.1016/j.jad.2019.03.077.

24. Sliva DD, Black CJ, Bowary P. Agrawal U, Santoyo JF, Philip N, Greenberg, BD, Moore CI, **Jones SR** (2018) A prospective study of the impact of transcranial alternating current stimulation on EEG correlates of somatosensory perception. Front. Psych. Nov 20;9:2117. doi: 10.3389/fpsyg.2018.02117
25. *Sahin M, ***Jones SR**, *Sweeney JA, Berry-Kravis E, Connors BW, Ewens, JB, Hartman AL, Levin AR, Potter WZ, Mamounas LA, on behalf of the Biomarker Workshop Faculty (2018) Discovering translational biomarkers in neurodevelopmental disorders. Nature Reviews, https://doi.org/10.1038/ d41573-018-00010-7

    ** Co-First author
26. Shin H, Law R, Tsutsui S, Moore CI, **Jones SR** (2017) The rate of transient beta frequency events predicts behavior across tasks and species. eLife 6:e29086
27. Lee S, Asaad W, **Jones SR** (2017) Computational modeling to improve treatments for Essential Tremor. Drug Discovery Today. Volume 19, Pages 19-25.
28. Black CJ, Voights J, Agrawal U, Ladow M, Santoyo J, Moore CI, **Jones SR** (2017) Open Ephys. Electroencephalography: A modular, low-cost, open-source solution to human neural recordings. J. Neural Engineering. 14(3):035002
29. **Jones SR** (2016) When brain rhythms aren't 'rhythmic': implications for their mechanisms and meaning. Curr. Opin. Neurobiol.; 40:72-80
30. Sherman M, Lee S, Law R, Haegens S, Thorn C, Hamalainen M, Moore CI, **Jones SR** (2016) Neural mechanisms of transient neocortical beta rhythms: Converging evidence from humans, computational modeling, monkeys, and mice. Proc. Natl. Acad. Sci.; 113(33):E4885-94
31. Law R and **Jones SR** (2016) Membrane state diagrams make electrophysiological models simple. bioRxiv doi: https://doi.org/10.1101/051839
32. Hwang K, Ghuman AS, Dara S. Manoach DS, **Jones SR**, Luna B (2016) Frontal preparatory neural oscillations associated with cognitive control: A developmental study comparing young adults and adolescents. Adolescent immaturities in frontal preparatory neural oscillations associated with inhibitory control Neuroimage; 136:139-48.
33. Sacchet M, LaPlante R, Wan Q, Pritchett D, Lee A K-C, Hamalainen M, Moore CI, Kerr CE and **Jones SR**.(2015) Attention drives synchronization of alpha and beta rhythms between right inferior frontal and primary sensory cortex. J. Neurosci.; 35(5):2074-20
34. Ahlfors SP, **Jones SR**, Ahveninen J, Hamalainen MS, Bar M (2015) Direction of magnetoencephalography sources associated with feedback and feedforward contributions in a visual object recognition task. Neurosci. Lett.; 585:149-54
35. Hwang Kai, Ghuman Avniel S, Manoach Dara S, **Jones SR**, Luna B (2014) Cortical neurodynamics of inhibitory control. J. Neurosci.; 34(29):9551-61.
36. Lee S and **Jones SR** (2013) Distinguishing mechanisms of gamma frequency oscillations in human current source signals using a computational model of a laminar neocortical network. Frontiers in Human Neurosci.; Dec 18; 867:869
37. Kerr CE, Sacchet M, Lazar S, Moore CI, **Jones SR** (2013) Mindfulness starts with the body: somatosensory attention and top-down modulation of cortical alpha rhythms in mindfulness meditation. Frontiers in Human Neurosci.; Feb 13:7-12
38. Carlen M, Konstantinos M, Siegle JH, Cardin JA, Fatai F, Vierling-Claassen D, Ruhlmann C, **Jones SR****, Deissertoth K, Sheng M, Moore CI, Tsai LH (2012) A critical role for NMDAR parvalbumin interneurons for gamma rhythm induction and cognitive function. Molecular Psych.; 17(5):537-48

** Senior author contribution on computational neural modeling component

39. Wan Q, Kerr CE, Pritchett D, Hamalainen M, Moore CI, **Jones SR** (2011) Dynamics of dynamics within a single data acquisition session: variation in neocortical alpha oscillations in human MEG. PLoS ONE.;6(9):e24941.
40. Kerr CE**, **Jones SR****, Wan Q, Pritchett DL, Wasserman RH, Wexler A, Villanueva JJ, Shaw JR, Kaptchuk TJ, Littenberg R, Hamalainen MS, Moore CI (2011) Effects of mindfulness meditation training on cortical dynamics: A MEG study of alpha rhythm modulation in SI. Brain Research Bulletin. 85(3-4):96-103.
** Joint first author contributions
41. Vierling-Claassen D, Cardin JA, Moore CI, **Jones SR** (2010) Computational modeling of neocortical oscillations driven by cell-type selective optogentic drive: resonant circuits controlled by low-threshold spiking and fast-spiking interneurons. Front. Human Neurosci. Nov 22, 4:198.
42. **Jones SR**, Kerr CE, Wan Q, Pritchett DL, Hamalainen MS, Moore CI (2010) Cued spatial attention drives representation-specific modulation of the alpha rhythm in primary somatosensory cortex. Journal of Neurosci. ;30(41):13760-5.
43. Ziegler DA, Pritchett DL, Hosseini-V. P, Corkin S, Hamalainen MS, Moore CI, **Jones SR** (2010) Transformations in oscillatory activity and evoked responses in primary somatosensory cortex in middle age: A combined comput. neur. modeling & MEG study. Neuroimage; 52(3):897:912.
44. **Jones SR**, Pritchett DL, Stufflebeam SM, Sikora M, Hamalainen MS, Moore CI (2009) Quantitative analysis and biophysically-realistic modeling of the MEG mu rhythm: rhythmogenesis and modulation of sensory evoked responses. J. of Neurophys; 102(6):3554-72.
45. Boas DA, **Jones SR**, Devor A, Huppert TJ, Dunn AK, Dale AM (2008) A vascular anatomical network model of the spatio-temporal response to brain activation. Neuroimage; 40(3):1116-29.
46. **Jones SR**, Pritchett DL, Stufflebeam SM, Hamalainen, M, Moore CI (2007) Neural correlates of tactile detection: A combined MEG and biophysically based computational modeling study. Journal of Neurosci.; 27(40):10751-10764.
47. **Jones SR**, Kopell N (2006) Local network parameters can affect inter-network phase lags in central pattern generators. Journal of Math Biology; 52(1):115-40.
48. Devor A, Ulbert I, Dunn AK, Narayanan SN, **Jones SR**, Andermann ML, Boas DA, Dale AM (2005) Coupling of the cortical hemodynamic response to cortical and thalamic neuronal activity. Proc. Natl. Acad. Sci. 2005;102(10):3822-7.
49. Pinto DJ, **Jones SR**, Kaper TJ, Kopell N (2003) Analysis of state-dependent transitions in frequency and long-distance coordination in a model oscillatory cortical circuit. Journal of Computational Neurosci.; 15(2):283-98.
50. Garabedian CE, **Jones SR****, Merzenich MM, Dale A, Moore CI (2003) Band-pass response properties of rat SI neurons. Journal of Neurophysiolog.; 90(3):1379-91.
**First author contribution on computational neural modeling component
51. **Jones SR**, Mulloney B, Kaper TJ, Kopell N (2003) Coordination of cellular pattern-generating circuits that control limb movements: the sources of stable differences in intersegmental phases. Journal of Neurosci.; 23(8):3457-68.
52. **Jones SR**, Pinto DJ, Kaper TJ, Kopell N (2000) Alpha-frequency rhythms desynchronize over long cortical distances: a modeling study. Journal of Computational Neurosci.; 9(3):271-91.

Professional Educational Materials and Chapters in Books (reverse chronological)

1. Vierling-Claassen N and **Jones SR** (2016) "Neural Rhythms". Chapter in Computational Neuroscience Textbook: From Neurons to Cognition: Computational Neuroscience MIT Press; Editor: M. Arbib
2. **Jones SR** (2015) "The Puzzle of Brain Rhythms", contributed Path of Discovery Box, in Neuroscience: Exploring the Brain, 4th edition; MF. Bear, BW. Connors, & M. Paradiso
3. **Jones SR** (2015) "Local Field Potential: Relationship to Electroencephalography (EEG) and Magnetoencephalography (MEG)". Chapter in Encyclopedia of Computation Neuroscience Springer Reference; Editors: D. Jaeger and R. Jung. Springer-Verlag Berlin Heidelberg.
4. **Jones SR** (2011) "Biophysically principled computational neural modeling of magneto-/electro-encephalography measured human brain oscillations". Chapter in Springer Neuromethods Textbook Series Neuronal Network Analysis; Editors: T. Fellin & M. Hallasa

MAJOR SOFTWARE CONTRIBUTIONS

2018-present	***Human Neocortical Neurosolver (HNN):*** *A software tool for circuit-level interpretation of MEG/EEG data.* HNN is a first-of-its-kind user-friendly GUI-driven software tool for researcher to develop and test hypotheses on the cellular- and circuit-level origin of their data (https://hnn.brown.edu; https://github.com/jonescompneurolab/hnn). In March 2021 a reorganized repository for all non-GUI components was released (https://github.com/jonescompneurolab/hnn-core) following best open-source practices.
2018-present	***Spectral Events Toolbox:*** A series of Matlab & Python functions that find and analyze transient high-power spectral events on a trial-by-trial basis. Tools to quantify features of such events such as rate, duration, amplitude, frequency span are also provided. See *https://github.com/jonescompneurolab/SpectralEvents*
2007-2010	***Open-Source Neural Models***: Several models of generalizable cortical column circuitry to simulate current dipole MEG/EEG signals in parallel using shareware NEURON were curated and freely available at *http://senselab.med.yale.edu/ModelDB/SearchByAut*

COMPLETED RESEARCH GRANTS

Completed Grants as Principal or Co-Principal Investigator

2022 - 2023	Zimmerman Innovator Award, Carney Institute for Brain Sciences Discovering novel biomarkers of aging & cognitive decline in large-scale open access human MEG data Role: PI
2018 – 2023	R01 NS108414 | NINDS Spatiotemporal Coding in the Pain Circuit Along the Spine-Brain Continuum Role: Co-Investigator. (PI: C. Saab, Cleveland Clinic)
2018 – 2022	P20GM103645 COBRE Center for Central Nervous System Phase II Role: Project Leader (PI: J. Sanes) "The Causal Role of Neocortical Beta Events in Human Sensory Perception"

2020 - 2022	NSF IIS-1912280 Role: Co-Investigator. (PI: T. Serre, Brown U.) CRCNS: US-France Research Proposal: Oscillatory processes for visual reasoning in deep neural networks
2018 - 2019	Medtronic Inc. - Brown Joint Research Project Role: Co-PI (Co-PIs D. Borton and C. Saab) "Physical and Computational Modeling of Sensory Relay"
2016 - 2019	NIBIB RO1 EB022889 & -02SI BRAIN Award in Theories, Models and Analysis Role: Contact PI (Co-PIs M. Hamalainen and M. Hines) "Human Neocortical Neurosolver"
2014 - 2019	NIMH RO1 MH106174 Collaborative Research in Computat. Neurosci. (CRCNS) Role: Contact PI (Co-PIs M. Hamalainen and A. Gramfort) "US-France Research: Revealing thalamocortical interactions in humans with MEG/EEG, intracranial recordings and computational neural modeling"
2015-2017	Providence VA Center for Excellence in Neurorestoration and Neurorehabilitation "Non-Invasive Approach to Alleviate Pain: Integrated tACS and Mindfulness"
2013-2016	Brown Inst. for Brain Sciences / Norman Prince Neurosci. Inst.: New Frontiers Fund "Effects of tACS in Tactile Perception and Acute Pain"
2016	NIH SBIR with Chin Chinglu Pharmaceutical Research "NMDA Receptor NR2D for the Treatment of IM"
2014-2015	Brown Univ. BioMed Dean's Emerging Areas of New Science Award (DEANS) "DBS to Reduce Beta Rhythms in Parkinon's disease Guided by Neural Modeling"
2011-2014	NSF Collaborative Research in Computational Neuroscience (CRCNS) "Contributions of thalamus and basal ganglia to neocortical beta oscillations"
2012-2013	Brown Inst. for Brain Sciences / Norman Prince Neuroscience Inst.: New Frontiers Fund "Targeting Deep Brain Stimulation to minimize cortical beta rhythms in PD"
2012-2013	Harvard Catalyst Boston Children's Hospital Pilot Research Grant "Electrophysiological cortical abnormality in encephalopathy of prematurity"
2011-2012	Harvard Med. Sch., Scholars in Medicine Dr. Reid Fellowship "Making Beta Waves: Integrating Methods to Rescue Parkinsonian Brain Activity"
2008-2010	Harvard Medical School, Claflin Distinguished Scholar Award "Computational Modeling of Hemo-Neural Interactions Relevant to Epilepsy"
2005-2010	NIH K25 Mentored Career Award "Neurodynamics of Attention MEG, EEG and Modeling"

INVITED KEYNOTE, SEMINAR & SYMPOSIUM SPEAKER (past 5 years)

2024	***Invited Seminar*** McGill University QLS/CAMBAM Seminar Series Montreal, CA (online, Jan 2024) Organizer: S. Krishna ***Invited Seminar*** Broad Institute Stanley Center for Psychiatric Research Boston MA (in person, Feb 2024) Organizer: J. Pan
2023	***HNN Workshop*** North America MEG Meeting Washington DC (in person, Nov 2023) Organizer: S.R. Jones

HNN Workshop Annual Society for Neuroscience Meeting
Washington DC (in person, Nov 2023)
Organizer: S.R. Jones
Invited Speaker ICERM Workshop Mathematical Neuroscience
Providence, RI (in person, Oct 2023)
Organizer: C. Curto
Invited Speaker Boston University Medical School Anatomy & Neurobiol. Seminar Series
Boston, MA (in person, Oct 2023)
Organizer: M. Medalla
Invited Speaker Neurotechnology Summer Workshop Seminar Speaker
Ben Gurion University, Ben Gurion, Isreal (in person, Aug 2023)
Organizer: O. Shreiki
Invited Speaker University of Minnesota, NeuroPRSMH Seminar Series (online, May 2023)
Organizer: S. Sponheim
Invited Speaker MetaCell Webinar: Maximize Your Research with Cloud Workspaces
(online, March 2023)
Organizer: M. Cantarelli
Keynote Speaker Max Planck Institute 10th Mind Brain Body Symposium
Berlin, Germany (in person, March. 2023)
Organizer: A. Peterchev
Invited Symposium Speaker 5th International Brain Stimulation Conference
Lisbon, Portugal (in person, Feb 2023)
Organizer: A. Babayan
Keynote Speaker India EMBO Lecture Course: Noninvasive Brain Stimulation – Advances
2022 in Research and Clinical Practice
Gujarat, India (hybrid, Dec. 2022)
Organizer: N. Thirugnanasambandam
Invited HNN Workshop Presentation @PracticalM/EEG Toolbox Bouquet, Aix-en-
Provence, France (online workshop, Dec. 2022)
Organizer: M. Chaumon
Invited Speaker Neuroscience Gatway Portal Workshop at Society for Neuroscience Meeting
San Diego CA (online workshop, Nov, . 2022)
Organizer: A. Majumdar
Keynote Speaker Ann. Meeting Society for Psychophysiological Research,
Vancouver, BC, Canada (in person, Oct. 2022)
Organizer: J. Wessel
Invited HNN Workshop Presentation BIOMAG 2022, University of Birmingham,
Birmingham, UK (in person, Aug. 2022)
Organizer: O. Jensen
Invited Speaker University of Chicago Neuroscience Institute
Chicago, Il (virtual, March. 2022)
Organizer: B. Doiron
Invited Speaker University of Miami Biomedical Engineering
Miami, Florida (in person, Feb. 2022)
Organizer: A. Dykstra
2021 ***Invited Speaker*** Complutense University of Madrid Center for BioTech.
Madrid, Spain (in person)
Organizer: F. Maestu
Invited Speaker & HNN Workshop CuttingEEG: International Symp. for Cutting-Edge

Methods for EEG, Aix-en-Provence, France (moved to online)
Organizer: M. Chaumon
Invited Speaker Bernstein Center for Computational Neuroscience
Berlin, Germany (moved to online)
Organizers: J. Neumann and M. Brecht
Invited Symposium Speaker 20th World Congress of Psychphysiology
Chengdu, China (moved to online)
Organizer: J. Schall and J. Riera-Diaz
Invited Speaker Transcontinental Computational Psychiatry
London, UK (moved to online)
Organizer: Q. Huys, M. Browning, M. Paulus
Invited Speaker U. Minnesota NIBS Workshop
Minneapolis, MN (moved to online)
Organizer: A. Opitz and I Alekseichuk
Invited Speaker U. Iowa Neuroscience Institute
Iowa City, IA (moved to online)
Organizers: J. Wessel and K. Hwang
Invited Speaker NetPyNe Modelling Workshop
Suny Downstate, NY (moved to online)
Organizer: S. Dura-Bernal
Invited Speaker Brain Week RI Mindfulness Panel
Providence, RI (moved to online)
Organizer: B. Greenberg
Invited Speaker U. Utah Biomedical Engineering
Salt Lake City, Utah (moved to online)
Organizer: C. Cornelssen
Invited Symposium Speaker Cognitive Neurosci. Society Annual Meeting Online
Organizer: J. Lefebvre
Invited Panel Advisor Presentation NIH BRAIN Initiative Transformative Non-Invasive Imaging Technology Workshop
Online
Organizer: S. Wang
Invited Speaker NIH BRAIN Initiative SFN Connectome Toolmakers Public Social, Online
Organizer: M. Olenick
Invited Symposium Speaker 7th International Conf. on NIBS,
Baden Baden, Germany (moved to online)
2020 Organizer: G. Ruffini
Invited Speaker Inst. of Cog, Neurosci, National Research U. Higher School of Economics
Moscow, Russia (moved to online)
Organizer: A. Ossadtch
Keynote Speaker (Mid-Career Award Presentation) BIOMAG 2020 Meeting of the International Sociaty for Biomagnetism
Birmingham, UK (moved to online)
Organizer: O. Jensen
Invited Speaker Allen Institute Workshop: Toward Multipurpose Models of Cortical Circuits,
Seattle, WA (moved to online)
Organizers: A. Arkhipov, G. Einevoll

Keynote Speaker BrainSTIM 2020
Helsinki Finland (moved to online)
Organizers: R. Ilmoniemi and V. Clark
Invited Speaker University of Oregon Institute for Neuroscience
Bend, OR (moved to online)
Organizer: N. Swann
Invited Speaker NYC Neuromodulation Conference
NY, NY (moved to online)
Organizer: G. Ruffini
Invited Speaker European Inst. of Theoretical Neurosci. Workshop: Modeling Brain Signals
Paris, France (in person)
Organizers: A. Destexhe, G. Einevoll, V. Jirsa

2019 ***Keynote Speaker*** MEG North America
Bethesda MD
Organizer: A. Nugent
Invited Speaker University of Connecticut, Brain Imaging Research Center
Storrs, CT
Organizer: F. Hoeft
Invited Speaker University of Toronto, Krembil Institute
Toronto CA
Organizer: F. Skinner
Invited Speaker NIMH Computational Psychiatry Retreat
Bethesda, MD; Organizer: D. Lietman NIMH
Invited Speaker Neuroscience Graduate Program Welcome Retreat, Brown Univ.
Providence, RI
Organizer: A. Hart
Invited Speaker Carolina Non-Invasive Brain Stimulation Meeting
Chapel Hill, NC
Organizer: F. Frohlich
Invited Speaker 7th Annual Science Factory
Helsinki Finland
Organizer: R. Ilmoniemi
Invited Speaker Aalto University Brain Centre Seminar Series
Helsinki, Finland
Organizer: L. Parkkonen
Keynote Speaker 2019 International BRAIN Twitter Conferences
Online
Organizer: A. Hulten
Invited Speaker University Medical Center Hamburg-Eppendorf, Dept. of Neurophyisology
Hamburg, Germany
Organizer: A. Engel
Invited Speaker University College London, Wellcome Center
London, UK
Organizer: G. Barnes, S. Besmann

2018 ***Invited Speaker*** Children's Hospital Boston Translational Neuroscience Center
Boston MA
Organizers: M. Sahin
Invited Panel Speaker Brown University, Building on Distinction
Providence RI

Organizers: D. Lipscombe and B. Sanstede

Invited Speaker "Human Neocortical Neurosolver: A New Tool For Circuit Level Interpretation of EEG/MEG Signals"
Brown University Neuroscience Graduate Program Retreat
Woodshole, MA
Organizers: A. Hart and G. Barnea
Invited BRAIN Initiative Workshop Presentation: "From Experiments to Theory and Back", Houston, TX
Organizers: J. Maunsell and C. Dulac
Invited Workshop Speaker Computational Psychiatry: Satellite Meeting to SFN Conference
Washington, DC
Organizers: P. Dayan, X. Gu, R. Montague
Invited Workshop Speaker Neuroscience Gateway Portal High Performance Computing Tools: Satellite Meeting to Annual SFN Conference
Washington, DC
Organizers: A. and Majumdar and T. Carnavale
Invited Speaker National Institute of Drug Addiction
Bethesda, MD
Organizer: A. Bonci
Invited Speaker Rhode Island Hospital Grant Rounds
Providence, RI
Organizer: J. Friedman
Keynote Speaker International BIOMAG Meeting
Philidelphia, PA
Organizer: T. Roberts, C. Edgar and W. Gaetz
Keynote Speaker Nordic MEG Meeting
Stockholm, Sweden
Organizer: D. Lundqvist
Invited Workshop (International) CuttingEEG 2018,
Paris, France
Organizers: A. Schramm

TEACHING

2022 & 2023	Co-Organizer and Instructor in Joint Brown University and Ben Gurion University Summer Workshop on Open Robotics and EEG
2019-present	Mechanism and Meaning of Neural Dynamics (NEURO 1440), Brown University, Providence RI
2018	Faculty Leader and Instructor in Wyss - Brown Neuroengineering Workshop Summer 2018, Providence, RI
2015-2017	"Neural Dynamics: Theory and Modeling." Graduate Course. Dept. of Applied Mathematics (APMA 2821V), Brown University, Providence, RI
	Co-Instructor in "Neural Dynamics". Undergraduate Course (Instructor: Moore)
2012-2015	Dept. of Neuroscience (NEURO 1440) Brown University, Providence, RI
2008	Lecturer in Neuroscience Graduate Course (Neural Dynamics) Brain and Cognitive Science Dept, MIT, Cambridge, MA

1998-1999	Part-time Faculty Instructor (Multivariate Calculus) Dept. of Mathematics, Boston College, Chestnut Hill, MA
1995-1997	Summer-Term Faculty Instructor (Algebra, Pre-Calculus, Calculus) AHANA Student Programs Mathematics, Boston College, Chestnut Hill, MA
1996-1998	Teaching Fellow (Differential Equations) Dept. of Mathematics, Boston University, Boston, MA
1993-1995	Teaching Fellow (Calculus, Multivariate Calculus) Dept. of Mathematics, Boston College, Chestnut Hill, MA

MENTORSHIP

Current Mentees

Junior Faculty	Matthew Nassar, Assistant Professor Neuroscience
Clinical Faculty	Brian Kavanaugh, Assistant Professor Psychiatry & Human Behavior, Bradley Hosp Laura Korthauer, Assistant Professor Psychiatry & Human Behavior, RIH Mohamed Sherif, Assistant Professor Psychiatry & Human Behavior, RIH
Post-doctoral	Mainak Jas (MGH, Co-Mentor with Matti Hamailainen) Darcy Diesburg (start date 9/1/2022) David Zhou (start date 9/1/2022)
Graduate	Ryan Thorpe (Brown Biomedical Engineering Master's; PhD cand. Neuroscience) Nicholas Tolley (PhD candidate Brown Neuroscience) Danielle Sliva (PhD candidate Brown Neuroscience) Chloe Zimmerman (MD/PhD candidate Neuroscience & Brown Medical Student)
Undergrad. Technicians	Nikolai Rogalinski (Neuroscience) Gnaneswari (Esha) Karayi (Contemplative Studies)
Research Technicians	Dylan Daniels (Brown B.S. Neuroscience ('15); Master's Public Affairs ('16)) Elizabeth Kaplan (Brown B.S. Cognitive Science ('22))

Past Students (mentorship location; current position)

Post-doctoral	Carmen Khol, PhD (Brown Neuroscience; Data Scientist London) Blake Caldwell, PhD (Brown Neuroscience; Columbia Medical School) Robert Law, PhD (Brown Neuroscience; Broad Institute) Shane Lee, PhD (Brown Neuroscience; Research Fellow, RIH) Nathan Vierling-Claassen (MGH/Brown Neuroscience; Industry Data Science) Paul Bowary (Brown Neuroscience; Neuropsych. Resident, Brown Med. Sch.)
Co-Mentored Graduate	Christopher Black (Brown Biomedical Engineering; Post-doc, UCL) Prannath Moolchand (Brown Neuroscience; Post-doc Stanford) Hyeyoung Shin (Brown Neuroscience; Post-doc Berkley) Elvira Pirondini (EPFL; Grant Sponsored Visiting Graduate Student)

	Dominique Pritchett (MIT / Brown Neurosci.; Faculty Howard University)
	David Ziegler (MIT Brain and Cog Sci.; Post-doc UCSD)
Undergrad.	Rachel Thomson (Neuroscience)
	Nova Chen (Neuroscience)
	Julia Ostrowski (Brown Computational Neuroscience: Honors Thesis Advisor)
	Juan Santoyo (Brown Neuroscience: Research Project Advisor)
	Cooper Penner (Brown Neuroscience: Capstone Thesis Advisor; ENP, Paris)
	Shawn Tsutsui (Brown Applied Math: Honors Thesis Advisor; UVA Med. School)
	Carolina Santiago (Brown Neuroscience: Honors Thesis Advisor; Neuroelectrics)
	Uday Agrawal (Brown Applied Math: Honors Thesis Advisor; Harvard Med. Sch.)
	Maxwell Sherman (Brown Applied Math: Honors Advisor; Park Lab, Harvard)
	Roan LaPlante (Brown Computer Science; MGH Technician)
	Nikolas Baya (Brown Applied Math: Summer UTRA Research; Class of 2018)
Technicians	Qian Wan (MGH/MIT; Graduate Student Harvard)
	Matthew Sacchet (MGH/MIT; Graduate Student Stanford)

Graduate Student Advisory Committees (since 2015)

Graduate Students Dissertation Committee at Brown University

Nicole Dusang (Brown Electrical and Computer Engineer, expected 2023)
Aneri Soni (Brown Neuroscience, PhD expected 2023)
Eric Klein (Brown Neuroscience, PhD expected 2023)
Ki-Soo Jeung (Brown MME, PhD expected 2023)
Seth Akers-Campbell (Brown Neuroscience, PhD 2022)
James Wilmott (Brown CLPS, PhD 2021)
Valerie Estela (Brown Neuroscience, PhD 2020)
Heysol Bermudez Cabrera (Brown Neuroscience NIH-GPP, PhD 2018)
Radu Darie (Brown BME, PhD 2018)
Brent Cross (Brown BME, MA 2015)

Graduate Students Dissertation Committee Outside of Brown University

Josep-Maria Balaguer Serra (Univ. of Pittsburg, Bioengineering, PhD expected 2024; Advisor: Marco Capogrosso
Solveig Naess Univ. of Oslo, Norway, Math. & Natural Science, PhD 2021; Advisor: Gaute Einevoll
Alexandros Gelastopoulos Boston University, Dept. of Math., PhD 2019; Advisor: Nancy Kopell

Other Mentorship

Google Summer of Code Mentor (Summer 2022 & 2023)
Leadership Alliance and BP-Endure Program Advisor (Summers 2019-present)
Brown UTRA Advisor (Summers 2013-present)

PROFESSIONAL SOCIETIES

1997-present	Society of Neuroscience
2014-present	Organization of Computational Neuroscience

Date Prepared: Feb 2024