

AARON SCHURGER PhD

CURRICULUM VITAE

Department of Psychology and
Institute for Interdisciplinary Brain and Behavioral Sciences
Chapman University
Orange, CA 92867
schurger@chapman.edu

EDUCATION

Princeton University, Princeton, New Jersey

PhD, Psychology and Neuroscience (awarded Jan 2009)
MA, Psychology and Neuroscience (awarded Jun 2004)
Supervisors: Jonathan D. Cohen and Anne Treisman

Indiana University, Bloomington, Indiana

BA, Computer Science (with honors); minor concentration in Music (awarded 1992)

PROFESSIONAL APPOINTMENTS

- 2019 – *Assistant professor*, Department of Psychology and
Institute for Interdisciplinary Brain and Behavioral Sciences
Chapman University, Orange, CA, USA
- 2014 – 2019 *Principal Investigator (Chargé de Recherche 1)*
INSERM (French National Institute of Health and Medical Research)
NeuroSpin Research Center, FRANCE
- 2013 – 2015 *Senior Researcher*, Department of Life Sciences
École Polytechnique Fédérale de Lausanne, Lausanne, SWITZERLAND
- 2012 – 2013 *Visiting Fellow*, Bernstein Center for Computational Neuroscience
Humboldt-Universität zu Berlin, Berlin, GERMANY
- 2008 – 2012 *Post-doctoral Researcher*, Laboratory of Cognitive Neuroimaging
NeuroSpin, CEA-Saclay, Gif-sur-Yvette, FRANCE

GRANTS / FELLOWSHIPS / AWARDS / HONORS

- 2021 Chapman University Co-Teaching Award
2020 **BrainStorm Neuroscience Pitch Competition**, Mind Science Foundation (\$15k)
2019 **Crean College Interdisciplinary Grant**, Crean College, Chapman U. (\$15k)
2018 **Templeton/Fetzer**, Multinational Research Project Grant (\$540k)
2016 **Leverhulme Trust**, Research Project Grant (co-PI, £220k)

2015 **Kaloy Prize**, Kaloyeropouleion Idryma-Fondation Kaloy (KIFK)
 2014 **ERC Starting Grant**, Horizon 2020 (€1.3M)
 2013 **William James Prize**, Association for the Scientific Study of Consciousness
 2010 **EC FP7 Marie Curie** Incoming International Fellowship (€174k)
 2007/08 Aspen Brain Research Retreat (Mind Science Found)
 2006 **US NIH Ruth L. Kirschstein National Research Service Award** (\$45k)
 2006 Summer Institute in Cognitive Neuroscience, Dartmouth College
 2005 **Mind Science Foundation Research Award** (\$15k)
 2002 **US NSF Graduate Research Fellowship** (\$96k)
 2002 **Princeton-Oxford Exchange Grant**, CSBMB, Princeton University (\$15k)
 2001 **Princeton University Centennial Fellowship** (\$45k)

EMPIRICAL PEER-REVIEWED PUBLICATIONS

Schotanus P, **Schurger A** (2021). Spontaneous Volatility: Fooled by Reflexive Randomness. *Journal of Behavioral Finance*, 22(2):201-213.

Travers E, Khalighinejad N, **Schurger A**, Haggard P (2020) "Do readiness potentials happen all the time?" *Neuroimage* **206**: 116286.

Guevara-Era R, Arbotto M, **Schurger A** (2019). "An integration-to-bound model of decision-making that accounts for the spectral properties of neural data." *Scientific Reports* **9**(1): 8365.

Schwiedrzik CM, Melloni L, **Schurger A** (2018) Mooney face stimuli for visual perception research. *PLoS ONE*, **13**(7):e0200106

Iscan Z, **Schurger A**, Vernet M, Sitt JD, Valero-Cabré A (2018) Pre-stimulus theta power is correlated with variation of motor-evoked potential latency: a single-pulse TMS study. *Exp Brain Res*, doi: 10.1007/s00221-018-5359-3.

Schurger A (2018) Specific relationship between the shape of the readiness potential, subjective decision time, and waiting time predicted by an accumulator model with temporally autocorrelated input noise. *eNeuro*, **5**(1) e0302-17.2018

Khalighinejad N, **Schurger A**, Desantis A, Zmigrod L, Haggard P (2018) Neural precursors of self-initiated movement: convergence and noise. *Neuroimage*, **165**: 35-47.

Schurger A, Faivre N, Cammoun L, Trovó B, BBlanke O (2017) Entrainment of voluntary movement to unperceived auditory regularities. *Nat Sci Rep*, 7:14867

Marchesotti S, Martuzzi R, **Schurger A**, Blefari ML, del R Millán J, Bleuler H, Blanke O (2017) Cortical and sub-cortical mechanisms of brain-machine interfaces. *Human Brain Mapping*, **38**(6):2971-2989.

Schurger A, Gale S, Gozel O, Blanke O (2017) Performance monitoring for brain-computer-interface actions. *Brain and Cognition*, **111**: 44-50

- Webb TW, Igelstrom KM, **Schurger A**, Graziano M (2016) Cortical networks involved in visual awareness independently of visual attention. *PNAS*, **113**(48): 13923–13928
- Gale S, Prsa M, **Schurger A**, Gay A, Paillard A, Heberlin B, Guyot JP, Lopez C, Blanke O (2016) Oscillatory neural responses evoked by natural vestibular stimuli in humans. *J Neurophysiol*, DOI:10.1152/jn.00153.2015
- Schurger A**, Kim M, Cohen JD (2015) Paradoxical interaction between ocular activity, perception, and metacognition at the threshold of vision. *PloS One*, DOI:10.1371/journal.pone.0125278
- Evans N, Gale S, **Schurger A**, Blanke O (2015) Visual feedback dominates the sense of agency for brain-machine actions. *PLoS One*, DOI:10.1371/journal.pone.0130019: 1-17
- Schurger A**, Sarigiannidis I, Dehaene S (2015) Cortical activity is more stable when sensory stimuli are consciously perceived. *PNAS*, **112**(16): E2083-2092 ★
- Schurger A**, Uithol S (2015) Nowhere and everywhere: the causal origin of voluntary action. *Review of Philosophy and Psychology*, DOI: 10.1007/s13164-014-0223-2
- King JR, Gramfort A, **Schurger A**, Naccache L, Dehaene S (2014) Two distinct dynamic modes subtend the detection of unexpected sounds. *PloS One* **9**(1):e85791
- Schurger A**, Marti S, Dehaene S (2013) Reducing multi-sensor data to a single time course that reveals experimental effects. *BMC-Neuroscience* **14**:122
- King JR, Faugeras F, Gramfort A, **Schurger A**, El Karoui I, Wacongne C, Labyt E, Bekenschtein T, Naccache L, Dehaene S (2013) Single-trial decoding of auditory novelty responses facilitates the detection of residual consciousness. *Neuroimage* **83**: 726-738
- Schurger A**, Sitt J, Dehaene S (2012) An accumulator model for spontaneous neural activity prior to self-initiated movement. *PNAS* **109**(42):16776-16777 ★★
- Schurger A**, Pereira F, Treisman A, Cohen JD (2010) Reproducibility distinguishes conscious from non-conscious neural representations. *Science* **327**: 97-99 ★
- Schurger A** (2009) A very inexpensive MRI-compatible method for dichoptic visual stimulation. *J Neurosci Methods* **177**(1):199-202
- Schurger A**, Cowey A, Cohen JD, Treisman A, Tallon-Baudry C (2008) Distinct and independent correlates of attention and awareness in a hemianopic patient. *Neuropsychologia* **46**(8):2189-97 ★
- Schurger A**, Cowey A, Tallon-Baudry C (2006) Gamma-band oscillations correlate with awareness in hemianopic patient GY. *Neuropsychologia* **44**:1796-1803

Nieuwenhuis S, Yeung N, Holroyd CB, **Schurger, A**, & Cohen JD (2004) Sensitivity of electrophysiological activity from medial frontal cortex to utilitarian and performance feedback. *Cerebral Cortex* **14**:741-747

REVIEW, OPINION, THEORY, AND COMMENTARY ARTICLES (PEER REVIEWED)

Schurger A, Graziano M (*in press*) Consciousness explained or described? *Neuroscience of Consciousness*.

Herzog M, **Schurger A**, Doerig A (*in press*) Pure first-person experience and the unfolding argument: Neo-Cartesian reasoning as a foundation for IIT and other causal structure theories ends up in dissociative epiphenomenalism. *Consciousness & Cognition*.

Schurger A, Roskies A, Pak J, Hu B (2021) What is the readiness potential? *Trends in Cognitive Sciences* **25**(7):558-570

Doerig A, **Schurger A**, Herzog MH (2021) Hard criteria for empirical theories of consciousness. *Cognitive Neuroscience*, **12**(2):41-62.

Doerig A, **Schurger A**, Hess K, Herzog MH (2019) The unfolding argument: Why IIT and other causal structure theories cannot explain consciousness. *Con & Cog*, **72**:49-59

Fried I, Haggard P, He B, **Schurger A** (2017) Volition and action in the human brain: processes, pathologies, and reasons. *J Neurosci* **37**(45):10842-10847

Schurger A, Mylopoulos M, Rosenthal D (2016) Neural antecedents of spontaneous voluntary movement: a new perspective. *Trends Cogn Sci*, **20**(2):77-79

Uithol S, **Schurger A** (2016) Reckoning the moment of reckoning in spontaneous voluntary movement. *PNAS*, **113**(4): 817-819

Schurger A (2014) Intentions and voluntary actions: reframing the problem. *Cognitive Neuroscience*, DOI: 10.1080/17588928.2014.950214

Schurger A (2014) Consciousness Perceived. *Science*, **345**:147 (Review of *Consciousness and the Social Brain*, Michael S. A. Graziano, Oxford Univ Press, 2013)

Schurger A, Sher S (2008) Awareness, loss-aversion, and post-decision wagering. *Trends in Cognitive Sciences* **12**(3):209-210

MANUSCRIPTS IN PREPARATION OR IN REVIEW

Mudrik L, et al (*in review*) Free will without consciousness? For *Trends in Cognitive Sciences*.

Basbug M, Schapire R, **Schurger A** (*in review*) The time course of neural activity predictive of impending movement.

Trovó B, Visser YF, Iscan Z, **Schurger A** (*in prep*) Movement-preceding neural activity under parametrically varying levels of time pressure

Schurger A (*in prep*) Dichoptic color masking

BOOK CHAPTERS

Contributed three chapters to edited volume "FREE WILL: Philosophers and Neuroscientists in Conversation" (2021) Oxford University Press, Edited by Uri Maoz and Walter Sinnott-Armstrong

Schurger A (2017) *The Neuropsychology of Free Will*, in *The Blackwell Companion to Consciousness*, S. Schneider & M. Velmans Eds., John Wiley & Sons, West Sussex, UK.

Schurger A, Cowey A (2013) *Blindsight*, in *Encyclopedia of the Mind*, H. Pashler Ed., Sage Publications, Thousand Oaks, CA, USA.

CONFERENCE ABSTRACTS / POSTERS / OTHER

Uribe C, Siemonsma C, Hughes D, Boyd L, & **Schurger A** (2020, March) Proposal 000244. *Searching for neural mechanisms for social cognition*. Proposal accepted at the Annual Convention of the California Speech-Language and Hearing Association, Anaheim, CA (Convention cancelled due to COVID-19).

İşcan Z, Trovò B, **Schurger A** (2018) *Long-Range Temporal Correlations in Resting-State Brain Oscillations are Correlated with Behavioral Parameters in a Self-Initiated Movement Task*, *Opera Med Physiol* 2018 Vol. 4 (S1), Section NEURODYNAMICS & ARTIFICIAL INTELLIGENCE, p:45, 2018. doi:10.20388/omp2018.00s1.003.

İşcan Z, Trovò B, **Schurger A** (2018) *Correlations between resting-state brain oscillations and behavior under time constraints*, *Anatomy*, Vol 12 / Suppl 1 / S-28, 2018. doi:10.2399/ana.18.001s

Schurger A, Sobolewski A, del R Millán J, Blanke O (2015). *Readiness to perform an action without movement of the body in expert brain-computer interface users*. 2015 Alpine Brain Imaging Conference, Champéry, Switzerland.

Schurger A and Marti S (2012). *Revealing the time-course of experimental effects in multivariate time-series data using a supervised leave-one-out procedure*. BioMag 2012, Paris

Marti S, **Schurger A**, Dehaene S (2012). *Revealing single-trial time course of a sensory buffer during the psychological refractory period using a new spatial filtering method*. SfN 2012, New Orleans

Schurger A, Parkkonen L, Souloumiac A, Monfort B, King JR, Naccache L, Dehaene S (2009) *Asynchronous decoding of brain states: experimental and clinical applications*. FRM/ICM Réunion Cerveau/Machine Interface (Brain-Machine Interface Meeting) 2009, Paris.

Schurger A, Pereira F, Treisman A, Cohen JD (2009) *Pattern of BOLD information distinguishes conscious from non-conscious responses to visual stimuli*. ASSC-13, Berlin

Schurger A, Kim MS (2007) *Category discrimination without awareness*. 2007 Princeton Research Symposium, Princeton, NJ.

Schurger A, Cowey A, Cohen JD, Treisman A, Tallon-Baudry C (2005) *Gamma-band oscillations correlate with awareness in blindsight*. OHBM 2005, Toronto.

Schurger A (2005) *Mooney Faces*. 2005 Princeton Art of Science competition. Image has been reproduced in several magazines and textbooks.

<http://www.princeton.edu/artofscience/gallery/view.php%3Fid=77.html>

Schurger A, Tallon-Baudry C, Cohen JD, Treisman A, Cowey A (2004) *MEG correlates of awareness in blindsight patient GY*. 2004 Princeton Neuroscience Retreat, Princeton, NJ.

INTRAMURAL STUDENT ORAL AND POSTER PRESENTATIONS

Chapman University Student Scholar Symposium, Orange, CA (2021, Dec 1):

The Relationship Between Norepinephrine Neuromodulation and Stability of Global Brain States Presenter(s): Emma Krivoshein Advisor(s): **Dr. Aaron Schurger**

Validating the Threshold of Conscious Perception Presenter(s): Cristina Uribe Advisor(s): **Dr. Aaron Schurger**

Attention in Decision-Making Presenter(s): Nancy Zhu, Martha Shaw, Amber Hopkins Advisor(s): Dr. Uri Maoz, **Dr. Aaron Schurger**

How Self-Evaluation of Demographics Modulates the Effects of Attractive Celebrity Images on Self-Image Presenter(s): Leyla Rakshani Advisor(s): **Dr. Aaron Schurger**, Dr. Matthew Ballew, Dr. Marina Kahana

Chapman University Student Scholar Symposium, Orange, CA (2021, May 5-7):

Norepinephrine and Global Brain Dynamics: a TMS-EEG-Pupillometry Study Presenter(s): Emma Krivoshein Advisor(s): **Dr. Aaron Schurger**

Probing for Intention: Latent Awareness or Metacognitive Reflection? Presenter(s): Kate Harder, Jake Gavenas Advisor(s): **Dr. Aaron Schurger**, Dr. Uri Maoz

Covert Attention and Deliberate Decisions Presenter(s): Nancy Zhu, Amber Hopkins Advisor(s): **Dr. Aaron Schurger**, Dr. Uri Maoz

Chapman University Student Scholar Symposium, Orange, CA (2020, Dec 2):

Norepinephrine and Global Brain Dynamics: a TMS-EEG-Pupillometry Study Presenter(s): Emma Krivoshein, Jake Gavenas, Joanna Pak Advisor(s): **Dr. Aaron Schurger**, Dr. Uri Maoz

EEG-Based Motor Imagery Classification Presenter(s): Nancy Zhu Advisor(s): Elnaz Lashgari, Tian Lan, Dr. Uri Maoz, **Dr. Aaron Schurger**

Pupillometric Investigation of Spontaneous Action and Intention Awareness Presenter(s): Kate Harder, Ruby Moss, Jake Gavenas Advisor(s): **Dr. Aaron Schurger**, Dr. Uri Maoz

Chapman University Student Scholar Symposium, Orange, CA (2020, May 5, 6):

Decoding the Time-Course of Abstract Intentions Presenter(s): Alexandra van der Hoeven, Alexandra Rudis, Jake Gavenas, Elnaz Lashgari Advisor(s): Dr. Uri Maoz, **Dr. Aaron Schurger**

Prediction of Self-Initiated Movement Presenter(s): Rebecca DeAngelis, Akima Connelly, Steven Kolinsky, Jeremiah Ayala, Joanna Pak, Lexi van der Hoeven Advisor(s): **Dr. Aaron Schurger**, Dr. Uri Maoz, Elnaz Lashgari

Effects of Reporting Movement and Intention Timing on Neural Precursors of Action: Evidence From Pupillometry Presenter(s): Jake Gavenas, Amber Hopkins, Sabrina Takla, Ruby Moss, Kate Harder, Andy Liang Advisor(s): Dr. Uri Maoz, **Dr. Aaron Schurger**

Norepinephrine and Global Brain Dynamics: a TMS-EEG-Pupillometry Study Presenter(s): Joanna Pak, Jake Gavenas, Emma Krivoshein Advisor(s): Dr. Uri Maoz, **Dr. Aaron Schurger**

Searching for Neural Mechanisms of Social Cognition Presenter(s): Chandler Siemonsma, Cristina Uribe Advisor(s): Dr. LouAnne Boyd, Dr. Deanna Hughes, **Dr. Aaron Schurger**

Chapman University Student Scholar Symposium, Orange, CA (2019, Dec 4):

Changes in Pupil Size Reflect Brain Processes before Spontaneous Actions Presenter(s): Jake Gavenas, Amber Hopkins, Ruby Moss, Kate Harder, Sabrina Takla, Romi Kariv Advisor(s): Dr. Uri Maoz, **Dr. Aaron Schurger**

Temporal Binding and Visual Masking Presenter(s): Roisin Cunningham, Hailey Worden, Amber Hopkins Advisor(s): **Dr. Aaron Schurger**

Chapman University Student Scholar Symposium, Orange, CA (2019, May 1,2):

“Eye” Decide: Using Pupillometry to Assess the Onset of Conscious Intention Presenter(s): Jake Gavenas, Andy Liang, Amber Hopkins, Tori Erickson, Alee Rudis Advisor(s): Dr. Uri Maoz, **Dr. Aaron Schurger**

Perceptions of Agency and Stimulus Onset Asynchrony Presenter(s): Morgan Kindel, Amber Hopkins Advisor(s): Dr. Uri Maoz, **Dr. Aaron Schurger**

AD-HOC REVIEWER FOR THE FOLLOWING JOURNALS

(w/ impact factor in parentheses)

Current Biology (9.6); Journal of Neuroscience (6.1); Journal of Neuroscience Methods (2.8); PNAS (9.4); NeuroImage (5.8); Journal of Experimental Psychology – General (3.2); PloS One (2.7); Psychological Science (4.9); Experimental Brain Research (2.4); Review of Philosophy and Psychology (1.5); Cognitive Neuroscience (3.5); Consciousness and Cognition (2.0); Computational and Mathematical Methods in Medicine (1.0); Cognitive Science (2.9); Nature Human Behavior (12.3); eNeuro (3.5); Nature Reviews Neuroscience (33.2); Expert Systems With Applications (5.5); Neuropsychologia (2.9); Schizophrenia Bulletin (7.6); Neuroscience of Consciousness (3.1); Trends in Cognitive Sciences (15.2); Cognitive Neurodynamics (5.1)

INVITED LECTURES / CONFERENCE TALKS / SYMPOSIA

Royal College of Psychiatrists Faculty of Neuropsychiatry Annual Conference

Invited Plenary Lecture

Lecture title: The readiness potential in the debate about conscious volition.
Royal College, London, UK, 17/18 September 2020 (cancelled due to COVID-19)
Delivered online via webcast, 18 September 2020

Association for the Scientific Study of Consciousness

24th Annual Conference (ASSC24), **Plenary Symposium speaker**

Symposium title: Relation between conscious intention and action formation.

Lecture title: *Modeling consciousness of the proximal decision to act.*

Symposium speakers: Aaron Schurger, Patrick Haggard, Adina Roskies, Uri Maoz
Tel-Aviv, Israel, June 2020 (cancelled due to COVID-19)
Rescheduled for June 2021 and delivered 14 June 2021

Science of Consciousness (TSC 2020)

2020 Annual Conference, **Plenary Symposium Speaker**

Symposium Title: The Role of Consciousness in Decision Making and Action

Lecture Title: The readiness potential in the study of conscious free will

Tucson, Arizona, 16 April 2020 (cancelled due to COVID-19)

Delivered online via webcast, 17 September 2020

UCSD Department of Psychology, Cognitive Brownbag

Invited Lecture: The readiness potential in the study of conscious volition

San Diego, California, 21 February 2020

Humanist Association of Orange County (HAOC)

Invited Public Lecture: Fifty Years Without Free Will
Irvine, California, 13 October 2019

Second International Conference on Neuroscience and Free Will
Invited Lecture: The Time Course of Neural Activity Predictive of Impending Movement
Chapman University, Rinker Campus, Irvine, CA, USA, 17 March 2019

Barcelona Cognition, Brain, and Technology (BCBT) summer school, 2018
Invited Lecture: Setting the Bar for Conscious Will
Barcelona, Spain, 6 September 2018

Center for Research in Cognition and Neurosciences, seminar series
Université Libre de Bruxelles
Invited Lecture: Computational models of decision making applied to spontaneous action
initiation and volition
Brussels, Belgium, 14 March 2018

The Society for Neuroscience
2017 Annual Conference, **Symposium Speaker**
Symposium title: Neural Mechanisms of Voluntary Action Control: From Habits to
Intentionality in Animals and Humans
Lecture title: The role of stochastic fluctuations in the initiation of voluntary action
Symposium speakers: Patrick Haggard, Biyu He, Rui Costa, Aaron Schurger
Symposium chair: Itzhak Fried
Washington, DC, November 2017

The Agora Conference on Free Will
Sponsored by the Sigtuna Foundation
Invited lecture: Fifty Years Without Free Will
Sigtuna, Sweden, June 2017

Association for the Scientific Study of Consciousness
21st Annual Conference (ASSC21), **Plenary Symposium speaker**
Symposium title: Conscious and Unconscious Processes in Decision Making
Lecture title: *Entrainment of finger tapping to unperceived auditory regularities.*
Symposium speakers: Aaron Schurger (INSERM), Martijn Wokke, Tristan Bekinschtein, Lucie
Charles, Simon van Gaal
Beijing, China, June 2017

Workshop on decision making, confidence, and the unconscious
Jointly sponsored by Peking University and the University of Birmingham
Invited lecture: Computational models of decision making applied to spontaneous action
initiation and volition.
Beijing, China, 12th June 2017

Italian Society for Neuroethics (SINe), University of Padova School of Psychology
International Scientific Conference on Neuroethics
Fourth Conference of the Italian Society for Neuroethics (SINe)

Invited Plenary Lecture: Why We Act When We Act: How Brain, Body, and Environment Interact in the Generation of Voluntary Action
Padova, Italy, 17 May 2017

University of Freiburg, Department of Psychiatry
Invited lecture: New advances in the neuroscience of action initiation and volition
Freiburg, Germany, 15 February 2017

Microsoft Research
Invited lecture: Fifty years without free will: Unraveling the science of volition
New York, New York, 12 July 2016

IMC Bootcamp on Agency, Interacting Minds Center, Aarhus University
Invited lecture: Neural antecedents of spontaneous voluntary movement
Aarhus, Denmark, 28 January 2016

Institute of Cognitive Neuroscience Seminar, University College London
Invited lecture: Fifty years without free will: Upending the Neuroscience of Volition and Starting over again.
London, 19 October 2015

ABC Colloquium, University of Amsterdam, Faculty of Science
Invited lecture: Stability as a hallmark of conscious perception.
Amsterdam, 11 Dec 2015

BMI Seminar / BMI-Kaloy Prize Lecture, Brain Mind Institute, EPFL
Prize lecture: Fifty years without free will.
Lausanne, Switzerland, 11 November, 2015

CUNY Cognitive Science Seminar, City University of New York, Graduate Center
Lecture title: The metaphysics of spontaneous behavior.
New York, NY, 9 July, 2015

Vision and Cognition Seminar, Brain Mind Institute, EPFL
Invited Lecture: *Transient stability marks decisions in recurrent networks and perception*
Lausanne, Switzerland, February, 2015

Bernstein Center for Computational Neuroscience, Freiburg (BCF)
Invited Lecture: *Cortical activity is more stable when stimuli are consciously perceived*
Freiburg, Germany, February, 2015

Division of Neurorehabilitation, University Hospital of Geneva
Invited Lecture: *Stability as a signature of conscious state in brain-injured patients*
Geneva, Switzerland, December 2014

Association for the Scientific Study of Consciousness
18th Annual Conference (ASSC18), **Plenary Symposium, organizer and speaker**
Symposium title: *Quantifying Consciousness: Theoretical and Clinical Implications*
Lecture title: *Stability as a signature of neuronal adequacy for subjective report.*

Symposium speakers: Aaron Schurger (EPFL, Lausanne), Jacobo Sitt (ICM, Paris), Marcello Massimini (Univ Milan, Italy), Anil Seth (Univ Sussex, UK)
Brisbane, Australia, July 2014

CUNY Cognitive Science Seminar (invited lecture)
Lecture title: *The time course of neural activity predictive of impending movement and its relation to the feeling of intending.*
CUNY, New York City, July 2013

Association for the Scientific Study of Consciousness
17th Annual Conference (ASSC17), **William James prize lecture, opening plenary session**
Lecture title: *Riding the cortical wave: An accumulator model for spontaneous neural activity prior to self-initiated movement.*
San Diego, CA, July 2013

Center for Neuro-Prosthetics (invited lecture)
Lecture title: *Spontaneous Neural Activity and Self-Initiated Movement*
École Polytechnique Fédérale de Lausanne, 10 October 2012

The Conscious Body: an interdisciplinary dialogue (invited lecture)
Lecture title: *A possible role for spontaneous brain waves in artistic improvisation.*
Paris, October 2012

CUNY Cognitive Science Seminar (invited lecture)
Lecture title: *Task-specific cortical activity is more stable when its information content is directly reportable.*
CUNY, New York City, July 2012

Association for the Scientific Study of Consciousness
16th Annual Conference (ASSC16), Concurrent Session 3.1
Lecture title: *Stability as a Hallmark of the Neural Dynamics Underlying Conscious Sensory Perception.*
University of Sussex, Brighton, UK, June 2012

Colloque de l'Institut d'Étude de la Cognition (invited lecture)
École Normale Supérieure Paris
Title: *Riding the cortical wave: spontaneous neural activity and self-initiated movement*
17 April 2012

Seminar on Causality (invited lecture)
NeuroSpin, CEA-Saclay, France
Title: *The neural antecedents of spontaneous movement initiation.*
12 January 2012

Lecture series for the Bioscience Master (invited lecture)
École Normale Supérieure de Lyon (Prof. Jean-René Duhamel)
Title: *Signatures of consciousness in the human brain*
26 May 2011

Colloque de l'Orme des Merisiers (**invited public lecture**)
l'Institut de Recherche sur les Lois Fondamentales de l'Univers
Title: *IRM: Perception et conscience / fMRI: Perception and consciousness*
Given in French, 7 April 2011

European Society for Psychology and Philosophy (ESPP) 2010 Annual Conference

Plenary Symposium, organizer and speaker

Symposium title: *Causality within the brain and between the brain and the limbs: a fresh look at the initiation of movement and the feeling of "intending"*

Lecture title: *Riding the cortical wave: volition as evidence accumulation*

Symposium speakers: Marc Pavlopoulos (CEA-Larsim, France), John-Dylan Haynes (BCCN, Berlin), Tillmann Vierkant (U. Edinburgh), Aaron Schurger (NeuroSpin, France)

CUNY Cognitive Science Seminar (invited lecture)

Lecture title: *Riding the cortical wave: volition as evidence accumulation*

CUNY Graduate Center, New York City, July 2010

Association for the Scientific Study of Consciousness

14th Annual Conference (ASSC14), Concurrent Session 1

Lecture title: *Paradoxical effects of fixational eye movements at the threshold of sensory awareness*

Toronto, Canada, June 2010

CUNY Cognitive Science Seminar (invited lecture)

Lecture title: *Category discrimination without awareness in normal subjects: evidence for a "Luke Skywalker" effect*

CUNY Graduate Center, New York City, June 2008

Towards a Science of Consciousness, "Tucson VIII"

Lecture title: *Category discrimination without awareness in normal subjects revealed using dichoptic color fusion and post-decision wagering*

Tucson, AZ, April 2008

Graduate Seminar Course on Cognitive Psychology, Spring 2008 (invited lecture)

Lecture title: *The Scientific Study of Consciousness*

Princeton University, March 2008

CUNY Cognitive Science Seminar (invited lecture)

Lecture title: *Dissociating attention from awareness, theoretically and empirically*

CUNY Graduate Center, New York City, April 2007

Association for the Scientific Study of Consciousness (**Tom Slick award lecture**)

10th Annual Conference (ASSC10), **Plenary Symposium 2**

Lecture title: *"Something happened": gamma oscillations, awareness, and attention-without-awareness in a hemianopic patient*

Oxford, UK, June 2006

Seminar Course on States of Consciousness, Spring 2006 (invited lecture)

Lecture title: *Blindsight, neural synchrony, and sensory awareness*

Vassar College, March 2006

Symposium: *Consciousness, Self-experience, and the Brain* (invited lecture)

Presenters: Aaron Schurger (in lieu of Jonathan D. Cohen), Joseph Lichtenberg, M.D.,
Milton Kramer, M.D., and Marcel Kinsbourne, M.D.

New York Medical College, Department of Psychiatry and Behavioral Sciences
New York City, April 2002

MEDIA ATTENTION

<https://horizon-magazine.eu/article/brain-controlled-computers-are-becoming-reality-major-hurdles-remain.html>

<https://www.theatlantic.com/health/archive/2019/09/free-will-bereitschaftspotential/597736/>

<https://www.informationphilosopher.com/solutions/scientists/schurger/>

<http://www.newscientist.com/article/mg22630164.500-sparks-of-consciousness-mapped-in-most-detail-yet.html>

<http://www.newscientist.com/article/dn18150-signature-of-consciousness-captured-in-brain-scans.html>

<http://www.newscientist.com/article/dn22144-brain-might-not-stand-in-the-way-of-free-will.html>

PODCAST INTERVIEWS

Jax Pax podcast, hosted by Jax Pax, Spring 2021

<https://lnns.co/D87XvrxBRGf>

BJKS Podcast, hosted by Benjamin Kuper-Smith, October 2020

<https://lnns.co/uXl5OAUVHip>

Watercooler Neuroscience Podcast, hosted by Wilf Nelson, October 2020
[in production]

CogNation podcast, hosted by Rolf Nelson, December 2019

<https://podcasts.apple.com/us/podcast/cognition/id1450113652?i=1000459931735>

Convergent Science Network Podcast, hosted by Paul Verschure, September 2018

<https://lnns.co/DZRMqJE4n7t>

LEADERSHIP AND ORGANIZATIONAL EXPERIENCE

Founder and co-organizer of the "Neuroscience of Brain-Computer Interfaces" (NBCI) seminar series

École Polytechnique Fédérale de Lausanne
January 2014 – May 2015

Co-organizer (w/ Etienne Klein and Frederic Pascal), *Seminar on Causality*
L'Orme des Merisiers, CEA-Saclay, France
January 2012

Co-organizer (w/ Claire Calmet and Regine Trebossen), visit to the Neurospin research center for a group of advanced high-school students.
January 2011

Co-organizer weekly seminars for the UNICOG research group at Neurospin
January 2009 – June 2011

Founder and organizer of the *Unsupervised Decoding Club* at Neurospin
A bi-weekly meeting that brings together the producers and the consumers of statistical learning techniques.
October 2009 – 2013 (continues under new direction)
(www.neurospin-wiki.org/pmwiki/Main/UnsupervisedDecodingClub)

Tutorial on the *derivation and use of spatial filters in the analysis of EEG and MEG data*
(Neurospin) June 2009

TEACHING

Fall 2021 **Neural Computation**, Chapman University
• Designed course and co-developed course materials in Spring/Summer 2021

Fall 2019, Spring 2020, Fall 2020, Spring 2021 **Sensation and Perception**, Chapman University

TEACHING ASSISTANTSHIPS

2008 **Cognitive Neuroscience**, w/ Prof. Sabine Kastner, Princeton University

2007 **Introduction to Psychology**, w/ Prof. Daniel Oppenheimer, Princeton University

2005 **Statistics for Psychology Research**, w/ Prof. Andrew Conway, Princeton University

2004 **Cognitive Neuroscience**, w/ Prof. Sabine Kastner, Princeton University
Developed the EEG component of the lab course. Taught precepts and labs.

SUPERVISING (present)

Graduate:

Bianca Trovó (PhD student, INSERM U992, Neurospin, France)

Lucas Jeay-Bizot (PhD student, Computer and Data Sciences, Chapman University)

Elnaz Lashgari (PhD student, Computer and Data Sciences, co-supervision w/ Uri Maoz, Chapman University)

Undergraduate:

Emma Krivoshein (Student-Faculty Research, Chapman University, Fall 2021)

Cristina Uribe (Student-Faculty Research, Chapman University, Fall 2021)

Emma Chen (Student-Faculty Research, Chapman University, Fall 2021)

SUPERVISING (past)

Graduate:

Amber Hopkins (Post-bac RA, Brain Institute, Chapman University, 2019-2021)

Joanna Pak (Post-bac RA, Brain Institute, Chapman University, 2020/21)

Ben Kuper-Smith (2nd year masters, INSERM U992, Neurospin, 2016-2017)

Silvia Marchesotti (PhD co-supervision, Department of Life Sciences, EPFL, 2013-2015)

Steven Gale (PhD co-supervision, Department of Life Sciences, EPFL, 2013-2015)

Leila Cammoun (1st year master's, Department of Life Sciences, EPFL, Spring 2014)

Ioannis Sarigiannidis (1st year master's, INSERM U992 / NeuroSpin, Feb - Sept 2011)

Jean-Rémi King (2nd year master's, INSERM U992 / NeuroSpin, 2009 academic year)

Undergraduate:

Emma Krivoshein (**Summer Undergraduate Research Fellowship**, Chapman University, Summer 2021)

Cristina Uribe (**Summer Undergraduate Research Fellowship**, Chapman University, Summer 2021)

Lian Koren (Student-Faculty Research, Chapman University, Spring 2021)

Leyla Rakshani (Student-Faculty Research, Chapman University, Spring 2021)

Nancy Zhu (Student-Faculty Research, Chapman University, Spring 2021)

Dani Farb (Individual study, Chapman University, Spring 2021)

Joanna Pak (**Summer Undergraduate Research Fellowship**, Chapman University, Summer 2020)

Kayla Ghodsi (Student-Faculty Research, Chapman University, Fall 2020)

Kate Harder (Student-Faculty Research, Chapman University, Fall 2020)

Emma Krivoshein (Student-Faculty Research, Chapman University, Fall 2020)

Dani Farb (Individual Study, Chapman University, Fall 2020)

Benjamin (Pengbo) Hu (Project RA, Pomona College, 2019 – 2020)

Cristina Uribe (Student RA, Chapman University, AY 2019-2020)

Chandler Siemonsma (Student RA, Chapman University, AY 2019-2020)

Roisin Cunningham (Volunteer student RA, Chapman University, AY 2019-2020)

Hailey Warden (Volunteer student RA, Chapman University, AY 2019-2020)

Emma Chen (Student-Faculty Research, Chapman University, Spring 2020)

Rebecca DeAngelis (Student-Faculty Research, Chapman University, Spring 2020)

Amanda Gonzalez (Student-Faculty Research, Chapman University, Spring 2020)

Emma Krivoshein (Student-Faculty Research, Chapman University, Spring 2020)

Ruby Moss (Student-Faculty Research, Chapman University, Spring 2020)

Joanna Pak (Student-Faculty Research, Chapman University, Spring 2020)

Alee Rudis (Student-Faculty Research, Chapman University, Spring 2020)

Bahram Saber (Student-Faculty Research, Chapman University, Fall 2019 & Spring 2020)

Sabrina Takla (Student-Faculty Research, Chapman University, Spring 2020)

Akima Connelly (Student-Faculty Research, Chapman University, Fall 2019)
Jeremiah Ayala (Student-Faculty Research, Chapman University, Fall 2019)
Brenda Gutierrez (Student-Faculty Research, Chapman University, Fall 2019)
Tori Erickson (Student-Faculty Research, Chapman University, Spring 2019)
Joceline Lvovich-Balanko (Student-Faculty Research, Chapman University, Spring 2019)
Demi Segura (Student-Faculty Research, Chapman University, Spring 2019)
Nicolas Oeggerli (bachelors project, Department of Life Sciences, EPFL, Spring 2014)
Leila Cammoun (bachelors project, Department of Life Sciences, EPFL, Fall 2013)
Manon Lécolier (bachelors project, Department of Life Sciences, EPFL, Fall 2013)
Min-Soo Kim (research internship, Princeton University, 2007-2008)

COMPUTING EXPERIENCE

Programming in MatLab (expert), C (advanced), and C++ (intermediate)
Psychophysics Toolbox for MatLab
Relational databases and SQL (expert)
Data-analysis tools: FieldTrip, SPM, AFNI

Selected programming contributions:

Effect-Matched Spatial Filtering (EMSf) MatLab Toolbox (on bitbucket.com).

“Helping parent” schedule solver and user interface.

University League Nursery School (Princeton, NJ).

Uses a Hopfield neural network to assign rotating shifts to “helping parents” based on individual preferences. Community service.

RESEARCH ASSISTANTSHIPS

1999 – 2001 Neuroethology of echolocation in free-flying bats

Full-time research assistant

Laboratory of Prof. Cynthia F. Moss, University of Maryland

Statistical data analysis; software development for signal processing, data management, and data visualization; free-flight behavioral experiments

1995 – 1998 Neuroethology of communication and electrolocation in electric fish

Research assistant

Laboratory of Prof. Philip Stoddard, Florida International University

Developed signal sorting methods in order to investigate rhythmic interactions between two fish during courtship and mating

PUBLICATIONS TO WHICH I CONTRIBUTED AS A RESEARCH ASSISTANT

Surlykke, A. and Moss, C.F. Echolocation behavior of the big brown bat, *Eptesicus fuscus*, in the field and the laboratory. *Journal of the Acoustical Society of America*, 2000, 108 (5) 2419-2429.

Moss, C.F. and Surlykke, A. Auditory scene analysis by echolocation in bats. Journal of the Acoustical Society of America, 2001, 110: 2207-2226.

PRIOR PROFESSIONAL ACTIVITY

Dewey & Schurger (Independent consulting partnership, 1995-1999)
Relational database systems for import-export and inventory control
Miami (USA), Castries (St. Lucia), Kingston (Jamaica)

Ernst & Young, LLP (Senior Information Technology Consultant, 1992-1994)
Development and optimization of relational database systems and software
Indianapolis (USA), Milton-Keynes (UK), Edinburgh, Mexico City
Based in Indianapolis, IN, USA

NATURAL LANGUAGES

Native English speaker; fluent in French (active) and Spanish (latent).

NATIONALITY

United States (by birth), France (by marriage)

OTHER ACTIVITIES

Classical vocal performance (lyric tenor)
Arias (Mozart, Rossini, Donizetti, Verdi); Lieder (Schubert, Strauss, Brahms)