

Jacobo Diego Sitt MD, PhD

Born: Buenos Aires, 21/04/1977

EDUCATION

1. **PhD Physics (Physics Department, Univ. of Buenos Aires)** 2005 - 2010
2. **Psychiatry Specialist (Maimonides University)** 2007 - 2011
3. **Medicine (University of Buenos Aires)** 1997 - 2003
4. **Bsc. Physics (University of Buenos Aires)** 1997 - 2005

CURRENT POSITION

Post-doctoral researcher. INSERM U992 / NeuroSpin / CEA-Saclay
Supervisor: Prof. Stanislas Dehaene. Starting date: 10/2010

PREVIOUS RESEARCH EXPERIENCE

1. **Post-doctoral researcher (PICNIC Lab, ICM INSERM U975)** 03/2010 - 10/2010
Supervisor: Prof. Laurent Cohen
2. **Doctoral Fellowship (Physics dept, Univ. of Buenos Aires)** 04/2005 - 03/2010
Supervisor: Prof. Gabriel Mindlin

TEACHING

1. **Teaching Assistant (Physics dep., Univ. of Buenos Aires)** 03/2005 - 03/2010
Level: Undergraduate/masters/doctoral.
Subjects: Electronics Lab, Physics Lab, Physics for biologists, Physics of the biological systems, computational neuroscience.
2. **Lecturer (ORT Institute of Technology, Buenos Aires)** 07/2002 - 12/2006
Level: Undergraduate.
Subjects: Human physiology, Image diagnosis.
3. **Teaching Assistant (Pharmacology dep., Univ. of Buenos Aires)** 03/2001 - 08/2003
Level: Undergraduate.
Subjects: Pharmacology I & II

THESIS ADVISOR OF MASTER STUDENTS

1. Noa Cohen, MSc stage 2013-2014 'Dual Masters in Brain and Mind Sciences'.
Title: "décodage en temps réel des signatures EEG-MEG des intentions et de la volonté"
2. Mariana Andres, Master Thesis defended 03/2009, Physics dept, Univ. of Buenos Aires
Title: "Construcción de una siringa electrónica para la sinterización de canto biomimético de Diamante Mandarin"

PUBLICATIONS

In review

- 1) Barttfeld P*, Uhrig L*, **Sitt JD***, Sigman M, Jarraya B, Dehaene S, "A signature of consciousness in the dynamics of resting-state brain activity" *PNAS* (in review)
* These authors contributed equally to this work.
- 2) Strauss M, **Sitt JD**, King JR, Elbaz M, Azizi L, Buiatti M, Naccache L, Van Wassenhove V, Dehaene S, "Disruption of hierarchical predictive coding during sleep" *PNAS* (in review)
- 3) Schurger A, Sarigiannidis I, **Sitt JD**, Naccache L, Dehaene S, "Cortical activity is more stable when sensory stimuli are consciously perceived" *PNAS* (in review)

Published

- 1) **Sitt, JD***, King, J.R*, El Karoui, I, Rohaut, B, Faugeras, F, Gramfort, A, Cohen, L, Sigman, M, Dehaene, S & Naccache, L. "Large Scale Screening of the Neural Signatures of Consciousness in Vegetative and Minimally Conscious State Patients." *Brain* (2014)
* These authors contributed equally to this work
- 2) El Karoui, I, King, J.R., **Sitt, JD**, Meyniel, F, Van Gaal, S, Hasboun, D, Adam, C, Navarro, V, Baulac, M, Dehaene, S, Cohen, L & Naccache, L. "Oscillatory and functional-connectivity facets of the MMN and P300: an intracranial study in humans." *Cerebral cortex* (2014)
- 3) King, J.R*, **Sitt, JD***, Faugeras, F., Rohaut, B., ... Dehaene, S. "Information Sharing in the Brain Indexes Consciousness in Noncommunicative Patients." *Current Biology* (2013)
* These authors contributed equally to this work
- 4) **Sitt, JD**, King, J.R., Naccache, L., & Dehaene, S. "Ripples of consciousness." *Trends in cognitive sciences* (2013)
- 5) King, J. R., Faugeras, F., Gramfort, A., Schurger, A., El Karoui, I., **Sitt, JD**, ... Dehaene, S. "Single-trial decoding of auditory novelty responses facilitates the detection of residual consciousness." *NeuroImage* (2013)
- 6) Naccache, L., Sportiche, S., Strauss, M., El Karoui, I., **Sitt, JD**, & Cohen, L. "Imaging "top down" mobilization of visual information: A case study in a posterior split-brain patient." *Neuropsychologia* (2013)
- 7) Schurger, A., **Sitt, JD**, & Dehaene, S. "An accumulator model for spontaneous neural activity prior to self-initiated movement." *PNAS* (2012)
- 8) **Sitt, JD**, Arneodo, EM, Goller, F. & Mindlin GB. "Physiologically driven avian vocal synthesizer", *Physical Review E* (2010)
- 9) **Sitt, JD**, Campetella, F., & Aliaga, J. "A low cost, modular, and physiologically inspired electronic neuron". *American Journal of Physics* (2010)
- 10) **Sitt, JD**, Amador, A., Goller, F., & Mindlin, G. "Dynamical origin of spectrally rich vocalizations in birdsong". *Physical Review E* (2008)
- 11) **Sitt, JD** & Aliaga, J. "Versatile biologically inspired electronic neuron". *Physical Review E* (2008)

PATENTS

Sitt, JD, King, J.R, Naccache, L. & Dehaene, S.
2013 European Patent Application No EP13305485: "A method to Monitor Consciousness"

PRINCIPAL INVITED TALKS AND PRESENTATIONS

Nov 2014. Arlington, USA. Cell Symposia: Translational Neuroscience 2014: Diagnosing consciousness with an automatic, web based, EEG analysis pipeline.

July 2014. Brisbane, AUSTRALIA. ASSC18. Chairman and speaker: SYMPOSIUM 3: Quantifying Consciousness: Theoretical and clinical implications

July 2013. San Diego, USA. ASSC17. Concurrent Session 1.3: Signatures of consciousness and predictors of recovery in vegetative and minimally conscious patients.

May 2013. Cambridge, UK. MRC Cognition and brain science unit. Lessons and applications from discriminating conscious state in DOC patients

July 2012. Brighton, UK. ASSC16. Concurrent Session 1.2: Cognitive capacity and not sedation level predicts neural signatures of conscious processing

Nov 2011. Washington, USA. SFN. Poster. Decoding conscious state in non-communicative patients using novel EEG measures.

June 2011. Osaka, JAPAN. ASSC15. Poster. Using complexity measures in consciousness

Oct 2009. Chicago, USA. SFN. Poster. Exploring song production mechanisms with an electronic syringe

COMMENTS ON MY WORK

Journal de dimanche, 27/10/2013. Coma, la dernière frontière.

New Scientist, 09/10/2013. Bedside scan can show embers of consciousness in comas

New Scientist, 06/08/2012. Brain might not stand in the way of free will

GRANTS

ERC Proof of concept 2014

Awarding institution: European Research Council

Title: CoMonIn: Automatic detection and monitoring of consciousness

Role: Associated researcher

STIC AmSud 2015-2017

Awarding institution: MINCyT (Argentina), MAEE (France), CAPES (Brazil), ANII (Uruguay)

Title: COMPLEX – Complexity as a neural marker. Applications to EEG and natural language processing.

Role: Principal investigator

GRANTS - CONTINUATION

STIC AmSud 2012-2013

Awarding institution: MINCyT (Argentina), MAEE (France), CAPES (Brazil)

Title: RTBRAIN – Towards Real-time processing of brain signals

Role: Principal investigator

ECOS-Sud 2012-2014

Awarding institution: MINCyT (Argentina), Universite Paris 13.

Title: Langage et mimetisme: etude comportamentale, modelisation et imagerie cerebrale

Role: Associated researcher

AWARDS/PRIZES/ WORKSHOPS/COURSES

1. Argentina National Science Council (CONICET)
Postgraduate Research Fellowship from 2005 to 2009
2. “2nd Latin American school for education, cognitive and neural science”, El Calafate, Argentina, 2012 ♣
3. “From Neurons to Cognition” workshop, Jerusalem, Israel, 8-12 October, 2007 ♣
4. PENS neuroscience school, “Advanced course in computational neuroscience”, Arcachon, France, August, 2006 ♣
5. SFI-NIH Workshop “The Foundations of Theoretical Medicine”, Santa Fe, USA, July 25-30, 2006 ♣
6. I Lascon, “I Latin American school on computational neuroscience”, Ribeirao Preto, Brazil, January 2006 ♣
7. SFI-NIH Workshop “Mathematical and computer models in medicine: disease and treatment”, Santa Fe, USA, 25 July - 6 August 2004 ♣
8. “Brain Imaging in Psychiatry”, Mount Sinai School of Medicine, NY, USA, January 2002
9. Argentinean representative, 27th International Physics Olympics, Oslo, Norway. July 1996
10. Argentinean representative, 26th International Physics Olympics, Canberra, Australia. July 1995
11. Gold medal in the Argentine Physics Olympics. Argentina, 1995 & 1994

♣ Selected for travel award

SCIENCE DIVULGATION WORK

1. International Junior Science Olympiads (IJSO)

Appointed as a team leader of the Argentina’s team at the IJSO by the ministry of education.

Selected and coached the team of students for the: III IJSO, Sao Paulo, Brazil; IV IJSO, Taipei, Taiwan; V IJSO, Changwon, Korea & VII IJSO, Abuja, Nigeria.

As part of the IJSO’s international board I took part of the development of the test in those competitions

LANGUAGES

Spanish (native), English (proficient), French (intermediate), Hebrew (intermediate)