

# **Matthew Nelson**

## **Curriculum Vitae**

CRICM, UMRS 975, exUMR 679  
INSERM – Université Pierre et Marie Curie; Hôpital de la Pitié-Salpêtrière  
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### **Education**

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|---------------------|---|----------------------|
| <b>2003-present</b> | <b>California Institute of Technology (Caltech)</b><br>Ph.D., Computation & Neural Systems<br>GPA 3.9/4.0         | <b>Pasadena, CA</b>  |
| <b>1999-2003</b>    | <b>University of Michigan</b><br>B.S.E., Chemical Engineering,<br>B.S., Biopsychology with Honors<br>GPA 3.55/4.0 | <b>Ann Arbor, MI</b> |

### **Awards and Academic Honors**

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| 2010-2011 | Égide Eiffel Doctorat Scholarship                                  |
| 1999-2003 | College of Engineering Honor's Scholarship- University of Michigan |
| 1999-2003 | Robert C. Byrd Honor's Scholarship- State of Michigan              |
| 1999      | Regent's Scholarship- University of Michigan                       |
| 1999      | National AP scholar  |

### **Academic Positions**

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| <b>2009-Present</b> | <b>Vidailheit Lab, Hôpital de la Pitié-Salpêtrière</b><br>Graduate Student, Adviser: Marie Vidailheit            | <b>Paris, FR</b>     |
| <b>2006-2009</b>    | <b>Schall Lab, Vanderbilt University</b><br>Graduate Student, Adviser: Jeff Schall                               | <b>Nashville, TN</b> |
| <b>2004-2006</b>    | <b>Andersen Lab, California Institute of Technology</b><br>Graduate Student, Adviser: Richard Andersen           | <b>Pasadena, CA</b>  |
| <b>1999-2003</b>    | <b>Aldridge Lab, University of Michigan</b><br>Research Assistant/Programmer, Adviser: Wayne Aldridge            | <b>Ann Arbor, MI</b> |
| <b>2001-2003</b>    | <b>Hagen Lab, University of Michigan</b><br>Research Assistant in Developmental Psychology, Employer: John Hagen | <b>Ann Arbor, MI</b> |

- 2001-2003**      **Multimedia Education Lab, University of Michigan**      **Ann Arbor, MI**  
Multimedia Software Developer/Manager, Employer: Susan Montgomery
- 2001**            **Nisbett Lab, University of Michigan**            **Ann Arbor, MI**  
Research Assistant, Employer: Dick Nisbett

## Publications

**Nelson, M. J.** & Pouget, P. (2012) Physical model of coherent potentials measured with different electrode recording site sizes. *Journal of Neurophysiology* 107:1291-1300.

**Nelson, M. J.**, Boucher, L., Logan, G. D., Palmeri, T. J., & Schall, J. D. (2010) Impact of nonstationarity of response time in stopping and stepping tasks. *Attention, Perception & Psychophysics* 72: 1913-1929.

**Nelson, M.J.** & Pouget, P. (2010) Do electrode properties create a problem in interpreting local field potential recordings? *Journal of Neurophysiology* 103: 2315-2317.

Pesaran, B. P., **Nelson, M. J.**, & Andersen, R. A. (2010) A relative position code for saccades in dorsal premotor cortex. *Journal of Neuroscience* 30: 6527-37.

Pouget P., Stepniewska I., Crowder E. A., Leslie M. W., Emeric E. E., **Nelson M. J.**, & Schall J. D. (2009) Visual and motor connectivity and the distribution of calcium-binding proteins in macaque frontal eye field: implications for saccade target selection. *Frontiers in Neuroanatomy*. 3:2.

Pesaran, B. P., **Nelson, M. J.**, & Andersen, R. A. (2008) Free choice activates a decision circuit between frontal and parietal cortex. *Nature* 453: 406-410.

**Nelson, M. J.**, Pouget, P., Nilsen, E. A., Patten, C. D. & Schall, J. D. (2008) Review of signal distortion through metal microelectrode recording circuits and filters. *Journal of Neuroscience Methods* 169: 141-157.

Pouget, P., **Nelson, M. J.**, Cohen, J. Y., & Heitz, R. P. (2007) Pulse-pattern sensitivity in the frontal eye field of the macaque monkey. *Journal of Neuroscience* 27: 11780-11781.

Pesaran, B. P., **Nelson, M. J.**, & Andersen, R. A. (2006) Dorsal premotor neurons encode the relative position of the hand, eye, and goal during reach planning. *Neuron* 51: 125-134.

## Invited Seminars

“How recorded electrophysiological neural data relates to underlying neural activity”, (2011) Unité de Neurosciences, Information & Complexité (UNIC) group seminar, *Centre National de la Recherche Scientifique (CNRS)*, Gif-sur-Yvette, France

“Frames of reference and effect of free choice on reaching activity in dorsal premotor cortex and area MIP”, (2006) Miller Lab seminar, *Massachusetts Institute of Technology*, Cambridge, MA

“Frames of reference and effect of free choice on reaching activity in dorsal premotor cortex and area MIP”, (2005) Schall Lab seminar, *Vanderbilt University*, Nashville, TN

## Conference Presentations

**Nelson, M. J.**, Bosch, C., Venance, L. & Pouget, P. (2010) Microscale obstructions of electrical current flow in the brain, *Society for Neuroscience Annual Meeting*, San Diego, CA

**Nelson, M. J.**, Poitou T., Wattiez N., Rivaud-Péchoux S., Gaymard B. and Pouget P. (2010) Spatial tuning of movement inhibition: A saccade countermanding study in human and non-human primates, *Society for Neuroscience Annual Meeting*, San Diego, CA

Ghoshal, A., **Nelson, M. J.**, Pouget, P., & Ebner, F. F. (2010) A novel mechanism for crossmodal interactions in normal rat S1 barrel cortex, *Society for Neuroscience Annual Meeting*, San Diego, CA

**Nelson, M. J.**, & Schall, J. D. (2009) Late onset but faster completion of motor processes following a change in planned saccade endpoint, *Society for Neuroscience Annual Meeting*, Chicago, IL

Heitz, R. P., **Nelson, M. J.**, Ferguson, K. E., Cohen, J. Y., Woodman, G. W., & Schall, J. D. (2009) Coherence of neurons and networks in frontal eye field, *Society for Neuroscience Annual Meeting*, Chicago, IL

**Nelson, M. J.**, Boucher, L., Logan, G. D., Palmeri, T. J., & Schall, J. D. (2008) Nonstationarity of saccade response time in stopping and stepping tasks, *Society for Neuroscience Annual Meeting*, Washington, DC

**Nelson, M. J.**, Boucher, L., Murthy, A., Thompson, K. G., Logan, G. D., Palmeri, T. J., & Schall, J. D. (2007) Executive control of search-step saccade performance investigated through trial history, *Society for Neuroscience Annual Meeting*, San Diego, CA

Pouget, P., Stepniewska, I., Leslie, M. W., Emeric, E. E., **Nelson, M. J.**, & Schall, J. D. (2007) A neuroanatomical test of premotor theory of attention, *Society for Neuroscience Annual Meeting*, San Diego, CA, (platform presentation)

**Nelson, M. J.**, Pouget, P., & Schall, J. D. (2006) Effect of electrode impedance on measurement of local field potentials in the supplementary eye field, *Society for Neuroscience Annual Meeting*, Atlanta, GA

**Nelson, M. J.**, Pesaran, B. P., & Andersen, R. A. (2005) Dorsal premotor neurons encode the relative position of the hand and eye, *Society for Neuroscience Annual Meeting*, Washington, DC, (platform presentation)

Pesaran, B. P., **Nelson, M. J.**, & Andersen, R. A. (2005) Coherence in dorsal premotor cortex and area MIP during free choice and instructed behaviors, *Society for Neuroscience Annual Meeting*, Washington, DC, (platform presentation)

Hagen, J. W., **Nelson, M. J.**, & Lison E. M. (2003) "Historical and recent trends in Child Development," *Society for Research on Child Development Tampa*

Hagen, J. W., **Nelson, M. J.**, & Karg, K. R. (2002) "Trends in published research in Child Development and other leading journals," *Head Start Conference Washington D. C.*

Hagen, J. W., **Nelson, M. J.**, & Pappas, G. D. (2002) "Trends in published research on adolescence," *Society for Research on Adolescence Bi-ennial Conference New Orleans*

## **Affiliations**

**2005 -** Society for Neuroscience  
**2008-** American Association for the Advancement of Science  
**2008-** Association for Psychological Science  
**2008-** The American Physiological Society