**CURRICULUM VITAE**

*September 2013*



***Chase Russell Figley***

Department of Radiology

University of Manitoba

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**ACADEMIC APPOINTMENTS:**

|  |  |
| --- | --- |
| Assistant Professor  (tenure-track)  Adjunct Research Scientist  CIHR Postdoctoral Fellowship | **University of Manitoba** *September 2013 - present*  Department of Radiology  **Johns Hopkins University** *September 2013 - present*  Department of Psychological  & Brain Sciences  **Johns Hopkins University** *September 2010 - August 2013*  Supervisor: Susan M. Courtney  FM Kirby Center for Brain Imaging  Psychological & Brain Sciences  Neuroscience |



**EDUCATION:**

|  |  |
| --- | --- |
| Ph.D. | **Queen’s University** *September 2005 - October 2010*  Neuroscience |
|  | ***Thesis: Improved Methods for Motion-Compensating and Event-Related Spinal Functional Magnetic Resonance Imaging (fMRI)***  Supervisor: Patrick W. Stroman  External Examiner: Alex L. MacKay |
| B.Sc. Honors | **University of Saskatchewan** *September 2001 - May 2005*  Chemistry |



**SCHOLARSHIPS, FELLOWSHIPS AND RESEARCH AWARDS:**

1. *CIHR Postdoctoral Fellowship*

*\*Ranked in the top 2% (10th of 500 applications)*

*September 2010 – September 2013*

*$150,000 ($50,000 per annum)*

1. *Johns Hopkins University Fellowship*

*September 2010 – September 2013*

*$1,000 (one-time award)*

1. *CIHR Fredrick Banting & Charles Best Canada Graduate Scholarship*

*September 2008 – September 2010*

*$70,000 (35,000 per annum)*

1. *Queen’s University Award of Excellence for Neuroscience Research*

*September 2006 – September 2010*

*$15,000 ($3,000 per annum)*

1. *International Society for Magnetic Resonance in Medicine (ISMRM) Education and Travel Award*

*April 2009*

*$600 (one-time award)*

1. *Ontario Graduate Scholarship for Science and Technology*

*September 2006 – September 2008*

*$30,000 ($15,000 per annum)*

1. *International Society for Magnetic Resonance in Medicine (ISMRM) Education and Travel Award*

*May 2008*

*$600 (one-time award)*

1. *International Society for Magnetic Resonance in Medicine (ISMRM) Education and Travel Award*

*May 2007*

*$600 (one-time award)*

1. *R.S. McLaughlin Research Fellowship*

*September 2005 – September 2006*

*$10,000 (one-time award)*

1. *University of Saskatchewan Summer Research Scholarship*

*May 2005 – September 2005*

*$7,000 and laboratory placement*

1. *University of Saskatchewan J.M. Pepper Honors Research Award*

*May 2005*

*Book, Plaque, and $200*

1. *University of Saskatchewan Nixon Summer Research Scholarship*

*May 2004 – June 2004*

*$6,000 and laboratory placement*

1. *University of Saskatchewan Entrance Scholarship*

*September 2001 – September 2002*

*$2,500 (one-time award)*



**PEER-REVIEWED PUBLICATIONS:**

***IN PRINT***

1. **CR Figley** and PW Stroman. “Measurement and characterization of the human spinal cord SEEP response using event-related spinal fMRI.” ***Magnetic Resonance Imaging***30(4): 471-484 (2012).
2. N Kozyrev, **CR Figley**, M Sipski-Alexander, JS Richards, R Bosma, and PW Stroman. “Neural correlates of sexual arousal in the spinal cords of able-bodied men: A spinal fMRI investigation.” ***Journal of Sex & Marital Therapy***38(5): 418-435 (2012)*.*
3. **CR Figley** and PW Stroman. “The role(s) of astrocytes and astrocyte activity in neurometabolism, neurovascular coupling, and the production of functional neuroimaging signals.” ***European Journal of Neuroscience*** 33(4): 577-588 (2011).

*\* Figure 2 from our paper was chosen as the cover art for this issue of EJN.*

*ŧ Ranked 6th on EJN’s “Most Cited” List (among articles published in 2011 or 2012)*

1. **CR Figley**. “Lactate transport and metabolism in the human brain: Implications for the astrocyte-neuron lactate shuttle hypothesis.” ***Journal of Neuroscience***31(13): 4768-4770 (2011).
2. **CR Figley**, JK Leitch, and PW Stroman. “In contrast to BOLD: signal enhancement by extravascular water protons as an alternative mechanism of endogenous fMRI signal change.” ***Magnetic Resonance Imaging*** 28(8): 1234-1243 (2010).
3. JK Leitch, **CR Figley**, and PW Stroman. “Applying functional MRI to the spinal cord and brainstem.” ***Magnetic Resonance Imaging*** 28(8): 1225-1233 (2010).

*\* Listed Among ScienceDirect "Top 25 Hottest Articles" (i.e., most downloaded in MRI between April and June 2010).*

1. **CR Figley** and PW Stroman. “Development and validation of retrospective spinal cord motion time-course estimates (RESPITE) for spin echo spinal fMRI: Improved sensitivity and specificity by means of a motion-compensating general linear model analysis.” ***NeuroImage***44(2): 421-427 (2009).
2. **CR Figley**, D Yau, and PW Stroman. **“**Attenuation of Lower-Thoracic, Lumbar, and Sacral Spinal Cord Motion: Implications for Imaging Human Spinal Cord Structure and Function.” ***American Journal of Neuroradiology***29(8): 1450-1454 (2008).
3. PW Stroman, **CR Figley**, and CM Cahill. “Spatial normalization, bulk motion correction, and coregistration for functional magnetic resonance imaging of the human cervical spinal cord and brainstem.” ***Magnetic Resonance Imaging***26(6): 809-814 (2008).
4. **CR Figley** and PW Stroman. “Investigation of Human Cervical and Upper Thoracic Spinal Cord Motion: Implications for Imaging Spinal Cord Structure and Function.” ***Magnetic Resonance in Medicine*** 58: 185-189 (2007).

***IN PREPARATION***

1. **CR Figley**, JSA Asem, EL Levenbaum, and SM Courtney. “Individual differences in human brain structure and function associated with body mass index and body fat percentage.” *To be submitted November/December 2013.*
2. **CR Figley** and SM Courtney. “Assessing individual differences in global and local white matter microstructure using quantitative tract integrity profiles (Q-TIPs).” *To be submitted January/February 2014.*
3. CK Jones, **CR Figley,** SM Courtney, and PCM Van Zijl. “An accelerated pulse sequence for whole brain multicomponent T2 myelin water imaging.” *To be submitted February/March 2014.*
4. N Kozyrev, **CR Figley**, M Sipski-Alexander, JS Richards, R Bosma, and PW Stroman. “Elucidating the neural correlates of sexual arousal in the spinal cords of able-bodied females using spinal fMRI.”  *To be submitted March/April 2014.*
5. R Bosma, N Kozyrev, **CR Figley**, M Sipski-Alexander, JS Richards, and PW Stroman. “Altered psycho- and reflexogenic sexual responses in spinal cord injured patients: comparison between preserved function, injury level/severity, and spinal cord fMRI data.” *To be submitted April/May 2014.*



**CONFERENCE ABSTRACTS AND PROCEEDINGS:**

1. **CR Figley**, EL Levenbaum, JSA Asem, and SM Courtney. “Individual differences in brain structure and functional connectivity related to body mass index (BMI) and body fat percentage (BFP).” *Society for Neuroscience 43rd Annual Meeting - Program Number 185.11 (San Diego, CA, USA, November 9-13, 2013).*
2. **CR Figley**, E Awuah, B Hurst, and SM Courtney. “Individual differences in cognitive performance: Relation to brain structure and function.” *Society for Neuroscience 42nd Annual Meeting - Program Number 393.25 (New Orleans, LA, USA, October 13-17, 2012).*
3. **CR Figley**, RL Beazer, and PW Stroman. “Epoch to impulse: Developing a method for event-related spinal fMRI.” *Proceedings of the American Society of Functional Neuroradiology (ASFNR) 4th Annual Meeting (Las Vegas, Nevada, USA, February 24-26, 2010)*
4. **CR Figley**, JK Leitch, C Nahanni, and PW Stroman. “Elucidating the impulse response function of SEEP contrast in the human spinal cord by means of event-related spin-echo spinal fMRI.” *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 17th Annual Scientific Meeting (Honolulu, Hawaii, USA, April 18-24, 2009).*
5. N Kozyrev, **CR Figley**, and PW Stroman. “Heart-rate based analysis of fMRI data can reveal ‘lost’ signal intensity changes in the spinal cord associated with distinct phases of the human sexual response.” *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 17th Annual Scientific Meeting (Honolulu, Hawaii, USA, April 18-24, 2009).*
6. PW Stroman, B Coe, **CR Figley**, JK Leitch, and DP Munoz. “Attentional modulation of thermal sensory responses in the human spinal cord.” *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 17th Annual Scientific Meeting (Honolulu, Hawaii, USA, April 18-24, 2009).*
7. JK Leitch, CM Cahill, N Foad-Ghazni, **CR Figley**, and PW Stroman. “Spinal cord and brainstem activation in carpal tunnel syndrome patients in response to noxious stimuli: A spinal fMRI study.” *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 17th Annual Scientific Meeting (Honolulu, Hawaii, USA, April 18-24, 2009).*
8. **CR Figley**, PW Stroman. “Physiological noise reduction in spinal fMRI from a single-stage, motion-compensating GLM approach.” *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 16th Annual Scientific Meeting (Toronto, Ontario, Canada, May 3-9, 2008).*
9. D Yau, **CR Figley**, C Nahanni, and PW Stroman. “Examination of cardiac-related motion in the lower-thoracic and lumbar spinal cord.” *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 16th Annual Scientific Meeting (Toronto, Ontario, Canada, May 3-9, 2008).*
10. PW Stroman, **CR Figley**, N Foad-Ghazni, N Kozyrev. “The enigma of intermediate and ventral spinal cord activity with thermal sensory stimulation: A spinal fMRI investigation.” *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 16th Annual Scientific Meeting (Toronto, Ontario, Canada, May 3-9, 2008).*
11. NA Kozyrev, MS Alexander, JS Richards, **CR Figley**, and PW Stroman. “Mapping a neural model of sexual responses in the human spinal cord with functional magnetic resonance imaging.” *Society for Neuroscience 38th Annual Meeting - Program Number 577.12 (Washington, DC, USA, November 15-19, 2008).*
12. **CR Figley** and PW Stroman. “Development of a novel method for motion-compensated spinal fMRI.” *Proceedings of the 6th Annual Imaging Network of Ontario Conference (Toronto, Ontario, Canada, March 28-29, 2007).*
13. **CR Figley** and PW Stroman. “**A new method of motion-compensated spinal fMRI: Identifying human spinal cord function with increased sensitivity and reproducibility**.” *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 15th Annual Scientific Meeting (Berlin, Germany, May 19-25, 2007).*
14. **CR Figley** and PW Stroman. “Characterization of spinal cord motion as a means of reducing errors in spinal fMRI.” *Proceedings of the 5th Annual Imaging Network of Ontario Conference (Toronto, Ontario, Canada, April 3-4, 2006).*
15. **CR Figley** and PW Stroman. “**Characterization of spinal cord motion: A source of errors in spinal fMRI?”** *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 14th Annual Scientific Meeting (Seattle, Washington, USA, May 6-12, 2006).*
16. PW Stroman, **CR Figley**, J Kornelsen, C Cahill, K Smith, and R Pokrupa. “Development of spinal fMRI towards a practical tool for assessing spinal cord injury.” *International Spinal Research Trust, 9th Research Network Meeting (London, England, September 1-2, 2006).*
17. **CR Figley**, DF Figley, and V Salares. “Characterization of arsenic and fungal contaminants in the wall cavities of preserved wood foundations.” *Proceedings of the 10th International Conference on Indoor Air Quality and Climate (Beijing, China, September 4-9, 2005).*
18. **CR Figley**, M Majewski, and JA Weil. “Study of the chemical reaction(s) between *tert*-butyl hydroperoxide and 2,2′-Diphenyl-1-picrylhydrazyl.” *Proceedings of the 2005 Western Canadian Undergraduate Chemistry Conference (Victoria, British Columbia, Canada, May 5-7, 2005).*



**INVITED TALKS:**

1. **CR Figley.** “Development and application of novel fMRI and DTI methods for human neuroimaging in healthy and clinical populations.” Department of Radiology, University of Manitoba (Winnipeg, Manitoba, December 14, 2012).
2. **CR Figley.** “fMRI methods, mechanisms and applications: Physiological basis of fMRI signals and neural correlates of cognitive performance in multiple sclerosis.” Hotchkiss Brain Institute and Department of Radiology, University of Calgary (Calgary, Alberta, April 16, 2012).
3. **CR Figley.** “Could functional neuroimaging signals reflect astrocytic more than neuronal activity?” Department of Psychology, University of Western Ontario (London, Ontario, December 11, 2009).
4. **CR Figley.** “Old challenges, new methods, and future directions for spinal cord fMRI.” F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Johns Hopkins Hospital (Baltimore, Maryland, USA, October 01, 2009).
5. **CR Figley.** “A tutorial on fMRI time-series and impulse response functions: hemodynamic and cellular changes following enhanced neuronal activity in the brain and spinal cord.” *Centre for Neuroscience Studies, Graduate Student Seminar Series (aka “The Friday Fights”)* (Queen’s University, Kingston, Ontario, Canada, March 20, 2009).
6. **CR Figley.** “Understanding k-space and fMRI preprocessing.”*Absolute Beginner’s Guide to fMRI at Queen’s* (Queen’s University, Kingston, Ontario, Canada, June 24, 2008).
7. **CR Figley.** “Improved sensitivity and reliability of spinal fMRI by removing sources of motion-related physiological noise.”*Centre for Neuroscience Studies, Graduate Student Seminar Series (aka “The Friday Fights”)* (Queen’s University, Kingston, Ontario, Canada, May 04, 2007).
8. **CR Figley.** “Evaluation of spinal cord motion as a source of errors in spinal fMRI.”*Queen’s University 9th Annual Scientific Meeting for Health Sciences Research Trainees* (Queen’s University, Kinston, Ontario, Canada, May 30, 2006).
9. **CR Figley.** “Study of the chemical reaction(s) between *tert*-butyl hydroperoxide and 2,2’-diphenyl-1-picrylhydrazyl.”*Western Canadian Undergraduate Chemistry Conference 2005* (Victoria, British Columbia, Canada, May 5-7, 2005).



**PATENTS AND INTELLECTUAL PROPERTY:**

1. DA Figley, CB Figley, **CR Figley**, and SA Figley. United States Patent and Trademark Office Provisional Patent (Number: US60/891,113). “Humidity Monitoring and Alarm System for Unattended Detection of Building Moisture.” Foreign Filing License Granted September 2007.

* *Involvement: development of moisture measurement protocols; acquisition of baseline data; prototype field-testing*



**GOVERNMENT REPORTS:**

1. **CR Figley**, DA Figley, and V Salares. “Preserved wood as a potential source of arsenic and fungi in the foundation walls of homes.” 4-page summary report prepared for the *Canada Mortgage and Housing Corporation (External Research Program Research Highlights – Technical Series, December 2007).*

*\* Freely available from the Government of Canada Publications website:*

*http://publications.gc.ca/pub?id=331904&sl=0*

1. **CR Figley**, DA Figley, and V Salares. “Preserved wood foundation wall cavity arsenic and mold study.” 22-page research report prepared for the *Canada Mortgage and Housing Corporation (External Research Program Research Report, August 2004).*

\* *Freely available from the Government of Canada Publications website: http://publications.gc.ca/pub?id=392105&sl=0*



**OTHER COPYWRITEN WORKS:**

1. Producer and co-host of *Brainwaves* *February 2009 – December 2009*

(10 one-hour episodes)

\* A *monthly radio program on CFRC 101.9 FM (Kingston, Ontario) that covered a broad range of neuroscience topics spanning basic science, technical developments, and clinical applications (included research highlights and interviews with neuroscience faculty members, postdoctoral fellows, medical residents, and graduate students).*



**TEACHING AND LEADERSHIP ACTIVITIES:**

***TEACHING***

1. *Functional Neuroimaging Graduate Seminar*

*Johns Hopkins University (AS.200.614)*

*Attendance = Approx. 20*

*September 2011 – September 2013*

*Co-Instructor (with P. Laurent)*

1. *Cognitive & Systems Neuroscience Colloquium*

*Johns Hopkins University*

*Attendance = Approx. 15*

*January 2011 – May 2011*

*Co-Coordinator (with P. Laurent)*

1. *Absolute Beginner’s Guide to fMRI*

*Queen’s University*

*Attendance = Approx. 25*

*May 2008 – September 2008*

*Coordinator & Instructor*

1. *Introductory (First-Year) Chemistry*

*University of Saskatchewan (CHEM110.6)*

*Attendance = Approx. 35*

*September 2004 – April 2005*

*Laboratory Instructor*

***COMMITTEE INVOLVEMENT***

1. *Faculty Assessment and Promotions Committee*

*Department of Anesthesiology*

*Queen’s University*

*September 2008 – December 2008*

*Graduate Student Representative*

1. *Faculty Recruitment and Hiring Committee*

*Centre for Neuroscience Studies*

*Queen’s University*

*September 2006 – September 2007*

*Graduate Student Representative*

1. *Graduate Student Seminar Series*

*Centre for Neuroscience Studies*

*Queen’s University*

*September 2006 – September 2007*

*Organizing Committee Member*

1. *Chemistry Student Society (CS2)*

*Department of Chemistry*

*University of Saskatchewan*

*May 2004 – May 2005*

*Vice-President*



**PROFESSIONAL DEVELOPMENT AND TRAINING:**

1. *Training: Philips MRI Scanner Operator (research only)*

*FM Kirby Center for Functional Brain Imaging*

*February 2012 - March 2012*

1. *Faculty and Leadership Skills in Academia*

*Johns Hopkins University (AS.360.690)*

*23 January – 26 January 2012*

1. *Functional Connectivity Analysis Workshop*

*Johns Hopkins Medical Institutes*

*12 December – 16 December 2012*

1. *AFNI Data Analysis Bootcamp*

*National Institutes of Health*

*21 February – 25 February 2011*

1. *MRI and DTI Studio Workshop*

*Johns Hopkins University*

*27 September – 28 September 2010*

1. *International School on Magnetic Resonance and Brain Function – VII Annual Meeting*

*Erice, Sicily*

*25 May – 30 May 2009*



**AD HOC REVIEW ACTIVITIES**

***GRANT REVIEW PANELS***

1. *L'Agence Nationale de la Recherché (ANR)*

“The French National Research Agency”

***Program BLANC:*** *Evaluation Panel SVSE5*

***Research Theme:*** *Physics, Chemistry and Biotechnological Innovation*

*March - April 2013*

***PEER-REVIEWED JOURNALS***

1. *PLoS ONE*

*(2011 Impact Factor = 4.09)*

*2012 - present*

1. *BMC Neuroscience*

*(2011 Impact Factor = 3.04)*

*2013 - present*

1. *Schizophrenia Bulletin*

*(2011 Impact Factor = 8.80)*

*2013 - present*

***CONFERENCE PROCEEDINGS***

1. *International Society for Magnetic Resonance in Medicine (ISMRM)*

*2009 - 2010*

1. *Organization for Human Brain Mapping (OHBM)*

*2011 - present*

***FACULTY of 1000 (post-publication review and commentary)***

1. *NeuroImage*

*2012 - present*

1. *Neuron*

*2012 - present*



**PROFESSIONAL AFFILIATIONS:**

1. *Faculty of 1000 (F1000) June 2012 – Present*

*Associate Faculty Member*

1. *American Society for Neurochemistry (ASN) February 2012 - Present*

*Postdoc Member*

1. *Society for Neuroscience (SfN) September 2011 – Present*

*Postdoc Member*

1. *Organization for Human Brain Mapping (OHBM) January 2008 – Present*

*Student/Postdoc Member*

1. *International Society for Magnetic Resonance in Medicine (ISMRM)*

*September 2005 - Present*

*Student/Postdoc Member*



**REFERENCES:**

***Susan M. Courtney, PhD***

*Department of Psychological & Brain Sciences*

*Solomon H. Snyder Department of Neuroscience*

*FM Kirby Center for Functional Brain Imaging*

*Johns Hopkins University*

*Baltimore, MD, USA*

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***Patrick W. Stroman, PhD***

*Canada Research Chair in Imaging Physics*

*Centre for Neuroscience Studies*

*Department of Diagnostic Radiology*

*Department of Physics*

*Queen’s University*

*Kingston, ON, Canada*

*Email:* [*stromanp@queensu.ca*](mailto:stromanp@queensu.ca)

***Steven Yantis, PhD***

*Department of Psychological & Brain Sciences*

*Solomon H. Snyder Department of Neuroscience*

*Zanvyl Krieger Mind/Brain Institute*

*Johns Hopkins University*

*Baltimore, MD, USA*

*Email:* [*yantis@jhu.edu*](mailto:courtney@jhu.edu)

***Douglas P. Munoz, PhD***

*Canada Research Chair in Neuroscience*

*Centre for Neuroscience Studies*

*Department of Physiology*

*Department of Psychology*

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