

Invited Lectures at International Meetings:

- July 2010. **Sharp, A.A.** “Penetration Mechanics and Mechanical Properties of Mouse Brain Tissue”
Brain Neuromechanics Workshop, Center for Mathematical Medicine,
Field’s Institute, University of Toronto, Toronto, Canada.
- January 2009 **Sharp, A.A.** “The Dynamic Clamp”
Towards a Dynamic Brain Clamp, Universidade Federal do Ceara, Sobral,
Brazil.
- January 2009 **Sharp, A.A.** “Interactions of Electrodes with the Brain”
Towards a Dynamic Brain Clamp, Universidade Federal do Ceara, Sobral,
Brazil.
- July 1999 **Sharp, A.A.** “High doses of pyridoxine administered during
embryogenesis alter embryonic motility and walking in chicks.”
12th International Meeting of the International Society for Posture and Gait
Research, Waterloo, Canada.

Published International/National Abstracts:

(* presentation by undergraduate student)

1. *Cain, B.W. and **A.A. Sharp**. (2012) A dual-axis probe system for the determination of planer force magnitude and direction from spontaneously active chick embryos. Program No. 788.13. *2012 Abstract Viewer/Itinerary Planner*. New Orleans, LA: Society for Neuroscience, Online.
2. **Sharp, A.A.** and S. Fromherz. (2012) Optogenetic inhibition of neuronal activity in chick embryos: expression of Arch and Halo in the spinal cord and DRG. Program No. 788.14. *2012 Abstract Viewer/Itinerary Planner*. New Orleans, LA: Society for Neuroscience, Online.
3. *Cain, B.W. and **A.A. Sharp**. (2012) A dual-axis probe system for the determination of planer force magnitude and direction from spontaneously active chick embryos. 2012 FUN Undergraduate Research Poster Session, October 15, New Orleans, LA, Online.
4. **Sharp, A.A.** and S. Fromherz. (2012) Optogenetic regulation of peripheral sensory or motor axons during chick embryogenesis. Program No. 919.4. *Experimental Biology 2012*. Online.
5. **Sharp, A.A.** and S. Fromherz. (2011) Experimental regulation of embryonic chick limb movements: an optogenetic approach. Program No. 335.05. *2011 Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience, Online.
6. *Fedorovich, Y. and **A.A. Sharp**. (2011) Pyridoxine Administration in Chick Embryos Causes a Decrease in Number of Large Diameter Axons but has no Effect on the Expression of Activated Caspase-3 in DRG Neurons. Program No.

- PI-08. 2011 Sigma Xi Annual Meeting & International Research Conference. November 10-13, 2011. Raleigh, NC, Online.
7. *Fedorovich, Y. and **A.A. Sharp**. (2010) Activated caspase-3, substance P and CGRP expression in embryonic chick DRG neurons after pyridoxine administration. Program No. 289.6. *2010 Abstract Viewer/Itinerary Planner*. San Diego, CA: Society for Neuroscience, Online.
 8. **Sharp, A.A.** and Williams, J. L. (2009) Force generation during obstructed embryonic motility in chick: implications for sensory-motor integration. Program No. 709.17. *2009 Abstract Viewer/Itinerary Planner*. Chicago, IL: Society for Neuroscience, Online.
 9. **Sharp, A.A.**, Flannery, M., Cramer, N., Restrepo, D. and Bowman. (2008) High-resolution photo-polymerization of conductive polymer electrodes for chronic recording. Program No. 778.2. *2008 Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience, Online.
 10. **Sharp, A.A.**, Kasprzak, S., Simoes-de-Souza, F., Cramer, N., Restrepo, D., Bowman, C. and Gall, K. (2007) High-Resolution Prototyping of Polymer-Based Chronic Electrodes. Program No. 414.20. *2007 Abstract Viewer/Itinerary Planner*. San Diego, CA: Society for Neuroscience, Online.
 11. Ortega, A.M., Gall, K., Restrepo, D. and **Sharp, A.A.** (2006) Mechanics of neuronal probe insertion at micrometer scales. Program No. 148.13. *2006 Abstract Viewer/Itinerary Planner*. Atlanta, GA: Society for Neuroscience, Online.
 12. Ortega, A.M., **Sharp, A.A.**, Restrepo, D. and Gall, K. (2006) *In-Vivo* Penetration Mechanics and Mechanical Properties of Mouse Brain Tissue at Micrometer Scales. *The 2nd Symposium on Mechanics of Soft Materials and Soft Tissues*. (in press).
 13. **Sharp, A.A.**, Panchawagh, H.V., Ortega, A., Gall, K. and Restrepo, D. (2006) Self-Deploying Shape Memory Polymer Neuronal Electrode Arrays. *The American Society of Mechanical Engineering* (in press).
 14. **Sharp, A.A.**, Panchawagh, H.V., Artale, R., Finch, D.S., Gall, K., Mahajan, R.L. and Restrepo, D. (2005) Slow Deployment of Shape Memory Polymer Neuronal Probes. Program No. 519.3. *2005 Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience, Online.
 15. **Sharp, A.A.**, Richardson-Burns S. Doucette, W., Panchawagh, H., Artale, R., Finch, D.S., Gall, K.A. and Restrepo, D. (2004) Effect of Material Composition and Insertion Rate on the Biocompatibility of Chronically Implanted Microelectrodes. Program No. 920.12. *2004 Abstract Viewer/Itinerary Planner*. San Diego, CA: Society for Neuroscience, Online.
 16. **Sharp, A.A.** and Bekoff, A. (2002) Embryonic Administration of Pyridoxine Selectively Kills trkC Immunoreactive Neurons in the DRG of Chicks. Program No. 166.4. *2002 Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience, Online.
 17. **Sharp, A.A.** and Finger, T.E. (2002) CCK-8 Potentiates the Afferent Synapse in the Primary Gustatory Nucleus of Goldfish. *Chem. Senses*. **27**:671.
 18. **Sharp, A.A.**, Farrell, W.J. and Finger, T.E. (2001) Tastant evoked activity in the primary gustatory nucleus of goldfish. *Chem. Senses*. **26**:1106.

19. **Sharp, A.A.** and Finger, T.F. (2000) Distribution of GABA and its role in regulating afferent evoked field potentials in sensory layers of goldfish gustatory lobes. *Soc. Neurosci. Abstr.* **26**:1973.
20. Bekoff, A., **Sharp, A.A.**, Koster, M. and Tahja, S. (2000) Embryonic motility of cultured chicks. *Soc. Neurosci. Abstr.* **26**:454.
21. **Sharp, A.A.** (2000) GABA_A and GABA_B antagonists alter evoked field potentials in sensory layers of goldfish gustatory lobes. *Chem. Senses.* **25**:678.
22. Jasiewicz, J., **Sharp, A.A.**, Bekoff, A. and Woollacott, M.H. (1999) Pre-hatch injection of pyridoxine (vitamin B₆) causes postural instability in post-hatch chicks. *Soc. Neurosci. Abstr.* **25**:2182.
23. **Sharp, A.A.** and Bekoff, A. (1999) High doses of pyridoxine administered during embryogenesis alter embryonic motility and walking in chicks. *Gait and Posture* **9** Suppl. 1:S16.
24. **Sharp, A.A.**, Jasiewicz, J., Woollacott, M.H. and Bekoff, A. (1999) Pre-hatch injection of pyridoxine (vitamin B₆) alters post-hatch walking in chick. *Gait and Posture.* **9** Suppl. 1:S54.
25. Jasiewicz, J., **Sharp, A.A.**, Bekoff, A. and Woollacott, M.H. (1999) Effects of sensory neuropathy induced by pyridoxine (vitamin B₆) injection on chick balance. *Gait and Posture.* **9** Suppl. 1:S56.
26. **Sharp, A.A.**, Boyle, C.A. and Bekoff, A. (1998) Pyridoxine induced proprioceptive neuronal loss during embryogenesis alters both embryonic and post-hatch motility. *Soc. Neurosci. Abstr.* **24**:1666.
27. **Sharp, A.A.**, Boyle, C.A. and Bekoff, A. (1998) The role of proprioception during the ontogeny of embryonic and post-hatch motility in chick. *Int. Soc. Neuroethol. Abstr.* 273.
28. **Sharp, A.A.**, Ma, E. and Bekoff, A. (1997) Kinematic analysis of embryonic motility in 11-day chick embryos. *Soc. Neurosci. Abstr.* **23**:636.
29. **Sharp, A.A.** and Bekoff, A. (1996) Effect of sensory input during rhythmic embryonic motility. *Soc. Neurosci. Abstr.* **22**:1641.
30. Caldwell, J.H. and **Sharp, A.A.** (1995) Differential clustering of sodium channels by alternatively spliced isoforms of agrin. *Molecular Mechanisms Regulating Skeletal Muscle Plasticity*, Airlie, Virginia.
31. **Sharp, A.A.**, Campanelli, J.T., Scheller, R.H. and Caldwell, J.H. (1995) The role of agrin isoforms in sodium channel clustering. *Soc. Neurosci. Abstr.* **21**:1776.
32. Skinner, F.K., **Sharp, A.A.** and Marder, E. (1994). Reciprocally inhibitory neural networks: Effects of variations in synaptic parameters. *Soc. Neurosci. Abstr.* **20**:1413.
33. **Sharp, A.A.**, Skinner, F.K. and Marder, E. (1994). Reciprocally inhibitory neural networks: Effects of variations in intrinsic parameters. *Soc. Neurosci. Abstr.* **20**:1413.
34. Skinner, F.K., **Sharp, A.A.**, Kopell, N. and Marder, E. (1993). Frequency control in reciprocal inhibitory neural networks. *Soc. Neurosci. Abstr.* **19**:1597.
35. **Sharp, A.A.** and Marder, E. (1993). Dynamic clamp dissection of the mechanisms of proctolin modulation of the pyloric rhythm. *Soc. Neurosci. Abstr.* **19**:996.

36. **Sharp, A.A.**, O'Neil, M.B., Abbott, L.F. and Marder, E. (1993). The Dynamic Clamp: A new approach for understanding the role of ionic conductances in neural network regulation. *Biophys. J.* **64**:A103.
37. LeMasson, G., Renaud-LeMasson, S., **Sharp, A.A.**, Abbott, L.F. and Marder, E., (1992). Real time interaction between a model neuron and the crustacean stomatogastric nervous system. *Soc. Neurosci. Abstr.* **18**:1055.
38. **Sharp, A.A.**, O'Neil, M., LeMasson, G., Abbott, L.F. and Marder, E. (1992). Dynamic Clamp: A method to construct artificial synapses and assess the role of voltage-dependent and synaptic conductances. *Soc. Neurosci. Abstr.* **18**:1055.
39. **Sharp, A.A.**, Abbott, L.F. and Marder, E. (1992). Artificial electrical coupling between pairs of oscillatory neurons. *FASEB J.* **6**:A508.
40. **Sharp, A.A.** and Marder, E. (1991). Artificially coupled stomatogastric neurons in primary cell culture. *Soc. Neurosci. Abstr.* **17**:122.
41. **Sharp, A.A.**, Golowasch, J. and Marder, E. (1990). Glutamate and acetylcholine responses from stomatogastric neurons in dissociated cell culture. *Soc. Neurosci. Abstr.* **16**:854.

Presentations at Local and Regional Meetings (since coming to SIU):

(* presentation by undergraduate student, + presentation by graduate student)

1. **A.A. Sharp** and S. Fromherz. "Optogenetic Regulation of Motility in Chick Embryos". The Sixth Biennial Southern Illinois Regional Neuroscience Retreat, Collinsville, IL. September 7-8, 2012. Short Seminar.
2. *Y. Fedorovich and **A.A. Sharp**. "Electrophysiological Characterization of Proprioceptive Neuron Loss due to Pyridoxine Overdose".
3. *Cain, B.W. and **A.A. Sharp**. (2012) A dual-axis probe system for the determination of planer force magnitude and direction from spontaneously active chick embryos.
4. **A.A. Sharp** and Y. Fedorovich. "The Selective Lesion of Proprioceptive Neurons with Pyridoxine and its Effect on Embryonic Motility in Chick". *CIR-CNS Scientific Poster Session*, SIU, January 2012. Poster.
5. *Y. Fedorovich and **A.A. Sharp**. "Pyridoxine Administration in Chick Embryos Causes a Decrease in Number of Large Diameter Axons but has no Effect on the Expression of Activated Caspase-3 in DRG Neurons" .*CIR-CNS Scientific Poster Session*, SIU, January 2012. Poster.
6. *Y. Fedorovich and **A.A. Sharp**. "Electrophysiological Characterization of Proprioceptive Neuron Loss due to Pyridoxine Overdose". *2012 Undergraduate Research Forum*, SIU, April 16, 2012. Poster.
7. *Y. Fedorovich and **A.A. Sharp**. "Pyridoxine Administration in Chick Embryos Causes a Decrease in Number of Large Diameter Axons but has no Effect on the Expression of Activated Caspase-3 in DRG Neurons" *The Ninth Annual Research Town Meeting and Fair*, SIU, April 17, 2012. Poster.
8. *Y. Fedorovich and **A.A. Sharp**. "Pyridoxine Administration in Chick Embryos Causes a Decrease in Number of Large Diameter Axons but has no Effect on the Expression of Activated Caspase-3 in DRG Neurons". *St. Louis Area Undergraduate Research Symposium*, St. Louis, April 21, 2012. Poster.

9. *B. Cain and **A.A. Sharp**. "Sensorimotor Integration in the Embryonic Chick: A Kinematic and Force Analysis of Movement" *2012 Undergraduate Research Forum*, SIU, April 16, 2012. Poster. **First Place Award!**
10. *B. Cain and **A.A. Sharp**. "Sensorimotor Integration in the Embryonic Chick: A Kinematic and Force Analysis of Movement" *The Ninth Annual Research Town Meeting and Fair*, SIU, April 17, 2012. Poster.
11. *Y. Fedorovich and **A.A. Sharp**. "Activated caspase-3, substance P and CGRP expression in embryonic chick DRG neurons after pyridoxine administration". CIR-CNS Scientific Poster Session, January 28, 2011. Poster.
12. *Y. Fedorovich and **A.A. Sharp**. "Activated caspase-3, substance P and CGRP expression in embryonic chick DRG neurons after pyridoxine administration". Undergraduate Research Forum at SIU. April 6, 2011. Poster.
13. *B. Cain and **A.A. Sharp**. "Sensory-Motor Integration in Early Embryogenesis." Undergraduate Research Forum at SIU. April 6, 2011. Poster.
14. +J.F. Pakiraih, J.L. Williams and **A.A. Sharp**. "Study of Sensory Control of Embryonic Chick Motility through Kinematic and Force Measurements". 8th Annual Research Town Meeting and Fair at SIU. April 7, 2011. Poster.
15. +J.F. Pakiraih, J.L. Williams and **A.A. Sharp**. "Software Tools Design for Analysis of Kinematic and Force Measurements in Chick Embryo". 21st Annual Research Trainee Symposium, SOM, SIU-C, April 22, 2011. Poster.
16. **A.A. Sharp** and S. Fromherz. "Optogenetic Approaches for Understanding Sensorimotor Development in Chick". CIR-CNS Scientific Poster Session, SIU, January 28, 2011. Poster.
17. **A.A. Sharp** and S. Fromherz. "Optogenetic Approaches for Understanding Sensorimotor Development in Chick". 8th Annual Research Town Meeting and Fair, SIU. April 7, 2011. Poster.
18. **A.A. Sharp** and S. Fromherz. "Optogenetic Approaches for Understanding Sensorimotor Development in Chick". The Fifth Biennial Southern Illinois Regional Neuroscience Retreat, Collinsville, IL. September 10-12, 2010. Short Seminar.
19. *Y. Fedorovich and **A.A. Sharp**. "Activated caspase-3, substance P and CGRP expression in embryonic chick DRG neurons after pyridoxine administration". The Fifth Biennial Southern Illinois Regional Neuroscience Retreat, Collinsville, IL. September 10-12, 2010. Poster.
20. +J.F. Pakiraih, J.L. Williams and **A.A. Sharp**. "Study of Sensory Control of Embryonic Chick Motility through Kinematic and Force Measurements". The Fifth Biennial Southern Illinois Regional Neuroscience Retreat, Collinsville, IL. September 10-12, 2010. Poster.
21. *Y. Fedorovich and **A.A. Sharp**. "Effect of Pyridoxine on Sensory and Motor Axons of Chicken Embryo". Undergraduate Research Forum at SIU. March 26, 2010. Poster.
22. *Y. Fedorovich and **A.A. Sharp**. "Effect of Pyridoxine on Sensory and Motor Axons of Chicken Embryo". 7th Annual Research Town Meeting and Fair at SIU. April 16, 2010. Poster.
23. *B. Cain and **A.A. Sharp**. "Sensory-Motor Integration In Early Embryogenesis." 7th Annual Research Town Meeting and Fair at SIU. April 16, 2010. Poster.

24. *Y. Fedorovich and **A.A. Sharp**. “Effect of Pyridoxine on Sensory and Motor Axons of Chicken Embryo”. St. Louis Area Undergraduate Research Symposium at Touch of Nature, May 1, 2010. Poster.
25. **A.A. Sharp**, M. Flannery, N. Cramer, D. Restrepo, C. Bowman. “High-resolution photo-polymerization of conductive polymer electrodes for chronic recording”. 6th Annual Research Town Meeting and Fair, SIU. April, 2009. Poster.
26. **A.A. Sharp**. “Sensory-Motor Integration during Development”. The Forth Biennial Southern Illinois Regional Neuroscience Retreat, September 12-13, 2008. Short Seminar.
27. **A.A. Sharp**, M. Flannery, N. Cramer, D. Restrepo and C. Bowman. “High-resolution photo-polymerization of conductive polymer electrodes for chronic recording”. 5th Annual Research Town Meeting and Fair, SIU, April 1, 2008. Poster.
28. **A.A. Sharp**. “Embryonic Administration of Pyridoxine Selectively Kills trkC Immunoreactive Neurons in the DRG of Chicks”. 5th Annual Research Town Meeting and Fair, SIU, April 1, 2008. Poster.