

CURRICULUM VITAE

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PUBLICATIONS

1. Scott, K.N., Couch, M.W., **Mareci**, T.H., Williams, C.M. Synthesis and purification of radioactive 6-b-iodomethyl-19-norcholest-5(10)-en-3-b-ol. *Steroids* 28:285-303 (1976).
2. Scott, K.N., Couch, M.W., **Mareci**, T.H., Williams C.M. Purity of the adrenal-scanning agents 19-iodocholesterol and 6-iodomethyl-norcholesterol. (Letter to the Editor). *J. Nucl. Med.* 18:492-493 (1977).
3. Scott, K.N., **Mareci**, T.H., Couch, M.W., Williams, C.M. Chemical and radiochemical stability of the adrenal-scanning agents, 6-b-iodomethyl-19-norcholest-5(10)-en-3-b-ol and 19-iodocholest-5-en-3-beta-ol. *Steroids* 30:511-519 (1977).
4. **Mareci**, T.H., Scott, K.N. Quantitative analysis of mixtures by carbon-13 nuclear magnetic resonance spectrometry. *Anal. Chem.* 49:2130-2136 (1977).
5. Couch, M.W., Scott, K.N., Brookeman, V.A., **Mareci**, T.H. The adrenal-scanning agents, 6-b-iodomethyl-19-norcholest-5(10)-en-3-b-ol and 19-iodocholest-5-en-3-b-ol. (Letter to the Editor). *Sem. Nucl. Med.* 8:365 (1978).
6. Scott, K.N., **Mareci**, T.H. ¹³C and ¹H nuclear magnetic resonance spectroscopy of C-19 and 6-b-methyl substituted steroids: Long-range shift effects in conformation analysis. *Can. J. Chem.* 57:27-37 (1979).
7. Freeman, R., **Mareci**, T.H., Morris, G.A. Weak satellite signals in high-resolution NMR spectra: Separating the wheat from the chaff. *J. Magn. Reson.* 42:341-345 (1981).
8. **Mareci**, T.H., Freeman, R. Nitrogen-15 satellites in proton NMR spectra observed by two-dimensional Fourier transformation. *J. Magn. Reson.* 44:572-576 (1981).
9. Sorenson, O., Freeman, R., Frenkiel, T., **Mareci**, T.H., Schuck, R. Observation of ¹³C-¹³C couplings with enhanced sensitivity. *J. Magn. Reson.* 46:180-184 (1982).
10. **Mareci**, T.H., Freeman, R. Echoes and antiechoes in coherence transfer NMR: Determining the signs of double quantum frequencies. *J. Magn. Reson.* 48:158-163 (1982).
11. **Mareci**, T.H., Freeman, R. Mapping proton-proton coupling via double quantum coherence. *J. Magn. Reson.* 51:531-535 (1983).
12. Bax, A., **Mareci**, T.H. Practical aspects of carbon-13 double quantum NMR. *J. Magn. Reson.* 53:360-363 (1983).
13. Mareci, T.H. and Brooker, H.R. High-resolution magnetic resonance spectra from a sensitive region defined with pulsed field gradients. *J. Magn. Reson.* 57:157-163 (1984).
14. Sattin, W., **Mareci**, T.H. and Scott, K.N. Exploiting the stimulated echo in nuclear magnetic resonance imaging I. Method. *J. Magn. Reson.* 64:177-182 (1985).
15. Sattin, W., **Mareci**, T.H. and Scott, K.N. Exploiting the stimulated echo in nuclear magnetic resonance imaging II. Applications. *J. Magn. Reson.* 65:298-307 (1985).
16. **Mareci**, T.H., Sattin, W., Scott, K.N. and Bax, A. Tip-angle-reduced T1 imaging. *J. Magn. Reson.* 67:55-65 (1986).
17. Mao J., **Mareci**, T.H., Scott, K.N. and Andrew, E.R. Selective inversion radiofrequency pulses by optimum control. *J. Magn. Reson.* 70:310-318 (1986).
18. Brooker, H.R., **Mareci**, T.H. and Mao, J. Selective Fourier transform localization. *Magn. Reson. Med.* 5:417-433 (1987).
19. Mao, J., **Mareci**, T.H. and Andrew, E.R. Experimental study of the optimized selective 180 degree radiofrequency pulses. *J. Magn. Reson.* 79:1-10 (1988).
20. Cockman, M.D. and Mareci, T.H. Convolution spectral imaging. *J. Magn. Reson.* 79:236-254 (1988).
21. **Mareci**, T.H., Donstrup, S. and Rigamonti, A. NMR imaging and relaxation study of polymer swelling and chain dynamics. *J. Mole. Liquids* 38:185-206 (1988).

22. Gaigalas, A.K., Van Orden, A., Robertson, B., **Mareci**, T.H. and Lewis, L.A. Application of magnetic resonance imaging to visualization of flow in porous media. *Nuclear Technology* 84:113-118 (1989).
23. Barker, G.J. and **Mareci**, T.H. Suppression of artifacts in multiple-echo magnetic resonance. *J. Magn. Reson.* 83:11-28 (1989).
24. Duensing, G.R., Cockman, M.D., **Mareci**, T.H. and Fitzsimmons, J.R. A digital phase shifter with 7.5 degree resolution. *J. Magn. Reson.* 84:275-281 (1989).
25. **Mareci**, T.H. and Brooker, H.R. Essential considerations for spectral localization using indirect gradient encoding of spatial information. *J. Magn. Reson.* 92:229-264 (1991).
26. Webb, A.G., Briggs, **Mareci**, T.H., Volume-localized spectroscopy using Selective Fourier Transform with windowing by variable-tip-angle excitation. *J. Magn. Reson.*, 94:174-179 (1991).
27. Anderson, D.G., Reier, P.J., Wirth, E.D. III, Theele, D.P., **Mareci**, T., and Brown, S.A. Delayed grafting of fetal CNS tissue into chronic compression lesions of the adult cat spinal cord. *Restorative Neurology and Neuroscience*, 2:309-325 (1991).
28. Wirth, III, E.D., Theele, D.P., **Mareci**, T.H., Anderson, D.K., Brown, S.A., and Reier, P.J. *In vivo* magnetic resonance imaging of fetal cat neural tissue transplants in the adult spinal cord., *J. Neuro. Surg.*, 76:261-274 (1992).
29. Pavesi L. and **Mareci** TH. High resolution proton relaxation in collapsing polyacrylamide gels. *Istituto Lombardo (Rend. Sc.) B* **126**, 130-148 (1992).
30. Wirth, III, ED, **Mareci** TH, Beck BL, Fitzsimmons JR and Reier PJ. A comparison of an inductively-coupled implanted coil with optimized surface coils for *in vivo* NMR imaging of the spinal cord. *Magn. Reson. Med.*, 30:626-633 (1993).
31. Webb, A.G., **Mareci**, T.H., and Briggs, R.W. Relative efficiencies of weighting methods for phase encode localized NMR. *J. Magn. Reson.* **103**, 274-277 (1994).
32. Wirth, III, E.D., Theele, D.P., Anderson, D. K., **Mareci**, T.H., and Reier, P.J. Dynamic assessment of intraspinal neural graft survival using magnetic resonance imaging. *Exp. Neurol.* **136**, 64-72 (1995).
33. Brey WW, **Mareci** TH and Dougherty J. A field-gradient coil using concentric return paths. *J. Magn. Reson. B* 1996:112;124-130.
34. Andrew ER, Inglis, B. A., Kempka, M., **Mareci**, T., and Szczesniak, E. Magnetic field gradient system for nuclear magnetic resonance microimaging., *MAGMA* 1996:4;85-91.
35. Inglis, B. A., Yang, L., Wirth, III, E. D., Plant, D., and **Mareci**, T. H. Diffusion Anisotropy in Excised Normal Rat Spinal Cord Measured by NMR Microscopy. *Magn. Reson. Imag* 1997:15;441-450.
36. Bui JD, Nammari DR, Buckley DL, Inglis BA, Silver XA, **Mareci** TH and Phillips MI. *In vivo* dynamics and distribution of intracerebroventricularly administered gadodiamide, visualized by magnetic resonance imaging. *Neuroscience* 1999:90;1115-1122.
37. Inglis BA, Neubauer D, Yang L, Plant D, **Mareci** TH, and Muir D. Diffusion Tensor MR Imaging and Comparative Histology of Glioma Engrafted in the Rat Spinal Cord. *Am. J. Neuro. Rad.* 1999:20;713-716.
38. Grant SC, Aiken NR, Plant DT, Gibbs S, **Mareci** TH, Webb AG and Blackband SJ. NMR Spectroscopy of Single Neurons. *Magn. Reson. Med* 2000:44;19-22.
39. Inglis BA, Bossart EL, Buckley DL, Wirth III ED and **Mareci** TH. Visualization of Neural Tissue Water Compartments using Biexponential Diffusion Tensor MRI. *Magn. Reson. Med.* 2001:45;580-587.
40. Silver XS, Ni-Wu W, Mercer EV, Beck BL, Bossart EL, Inglis BA and **Mareci** TH. *In Vivo* ¹H Magnetic Resonance Imaging and Spectroscopy of the Rat Spinal Cord using an Inductively Coupled Chronically Implanted RF Coil. *Magn. Reson. Med.* 2001;46:1216-1222.
41. Beck B, Plant DH, Grant SC, Thelwall P, Silver X, **Mareci** TH. Benveniste H, Smith M, Collins C, Crozier S, Blackband SJ. Progress in High Field MRI at The University of Florida, *MAGMA* 2002;13:152-157.
42. Ozarslan E and **Mareci** TH. Generalized Diffusion Tensor Imaging and Analytical Relationships Between Diffusion Tensor Imaging and High Angular Resolution Diffusion Imaging. *Magn. Reson. Med.* 2003;50:955-965.
43. McGraw T, Vemuri BC, Chen Y, Rao M and **Mareci** T. DT-MRI denoising and neuronal fiber tracking. *Med. Imag, Analysis* 2004;8:95-111.
44. Wang, Z, Vemuri BC, Chen Y, Rao M and **Mareci** TH. A constrained variational principle for direct estimation and smoothing of the diffusion tensor field from complex diffusion weighted images. *IEEE Transactions on Medical Imaging*, 2004;23:930-939.

45. Velardo, MJ, Burger, C, Williams, PR, Baker, HV, Lopez MC, **Mareci TH**, White TE, Muzyczka N and Reier, PJ. Patterns of gene expression reveal a temporally orchestrated wound healing response in the injured spinal cord. *J. Neuroscience*, 2004;24:8564-8576.
46. Ozarslan E, Vemuri BC and **Mareci TH**. Generalized Scalar Measures for Diffusion MRI Using Trace, Variance and Entropy. *Magn. Reson. Med.*, 2005;53:866-876.
47. Berens SA, Colvin DC, Yu C-G, Yeziarski, RP and **Mareci TH**. Evaluation of the Pathological Characteristics of Excitotoxic Spinal Cord Injury with Magnetic Resonance Imaging. *Am. J. Neurorad.* 2005;26:1612-1622.
48. Sanchez JC, **Mareci TH**, Norman WM, Principe JC, Ditto WL and Carney PR. Evolving into Epilepsy: Multiscale Electrophysiological Analysis and Imaging in an Animal Model. *Experimental Neurology* 2006;198:31-47.
49. Ozarslan E, Shepard TM, Vemuri BC, Blackband, SJ and **Mareci TH**. Resolution of Complex Tissue Microarchitecture using Diffusion Orientation Transform (DOT). *NeuroImage* 2006;31:1086-1103.
50. Shepard TM, Ozarslan E, King MA, **Mareci TH** and Blackband SJ. Structural Insights from High-Resolution Diffusion Tensor Imaging and Tractography of the Isolated Rat Hippocampus. *NeuroImage* 2006, in press.
51. Sarntinoranont M, Chen X, Zhao J, and **Mareci TH**. Computational Models of Interstitial Transport in the Spinal Cord using Diffusion Tensor Imaging . *Ann. Biomed. Engineering*, 2006, in press.
52. Perrin GQ, Fishbein L, Thomson SA, Hwang MS, Scarborough MT, Yachnis AT, Wallace MR, **Mareci TH**, and Muir D. Malignant peripheral nerve sheath tumors in the mouse by xenograft of an NF1 tumor-derived Schwann cell line. Submitted to *Am J Pathology*, 2006.

CONTRIBUTED CHAPTERS IN BOOKS

1. **Mareci TH**, "Principles of multiple quantum spectroscopy." in *Methods in 1D and 2D Liquid-Phase NMR*. Brey WS (ed.), Academic Press, New York, 1988.
2. **Mareci TH**, "NMR Facilities at the NHMFL." in *Proceedings of the National High Magnetic Field Laboratory Workshop on Nuclear Magnetic Resonance*, February 15, 1991, edited by E. R. Andrew, T. Mareci, and N. S. Sullivan, University of Florida Press, Gainesville, Florida, 1992.
3. Andrew ER., **Mareci TH** and Sullivan NS: *Proceedings of the National High Magnetic Field Laboratory Workshop on Nuclear Magnetic Resonance*, February 15, 1991, University of Florida Press, 1992.
4. Benveniste H, **Mareci T**, Blackband, S, "Anatomical studies in the rodent brain and spinal cord: Applications of magnetic resonance microscopy." in *Biomedical Imaging in Experimental Neuroscience*. Van Bruggen N and Robert T (eds.), CRC Press, Boca Raton, 2002.
5. McGraw T, Vemuri BC, Wang Z, Chen Y, Rao M and **Mareci T**, "Line Integral Convolution for Visualization of Fiber Tract Maps from DTI" in *Lecture Notes in Computer Science*, Volume 2489, pp. 615-622, 2002.
6. Wang Z, Vemuri BC, Chen Y and **Mareci T**, "A Constrained Variational Principle for Direct Estimation and Smoothing of the Diffusion Tensor Field from DWI." in *Lecture Notes in Computer Science*, Volume 2732, pp. 660-671, 2003.
7. Ozarslan E and **Mareci TH**, "Anatomical connectivity in the central nervous system revealed by diffusion tensor magnetic resonance imaging (DT-MRI)", in *Quantitative Neurosciences: Models, Algorithms, Diagnostics, and Therapeutic Applications*, ed. P. M. Pardalos, C. J. Sackellares, P. R. Carney and L. D. Iasemidis, Boston: Kluwer Academic Publishers, p. 147-171.
8. Özarslan E, Shepherd TM, Vemuri BC, Blackband SJ and **Mareci, TH** "Fast Orientation Mapping from HARDI" in *Lecture Notes in Computer Science*, Volume 3749, pp. 156-163, 2005.
9. McGraw T, Vemuri B, Yeziarski R and Mareci T, "Segmentation of High Angular Resolution Diffusion MRI Modeled as a Field of von Mises-Fisher Mixtures", in *Lecture Notes in Computer Science*, Volume 3953, pp. 463-475, 2006
10. Ozarslan E, Vemuri BC and **Mareci TH.**, "Higher rank tensors in diffusion MRI", in *Mathematics and Visualization*, ed. J. Weickert and H. Hagen, Springer-Verlag, *submitted*.

MONOGRAPHS

1. Mareci TH, "The radial distribution function for particles interacting through an attractive $1/R$ potential." Master of Science thesis, Graduate Council, University of Florida, Gainesville, Florida, 1979; 106 pages.
2. Mareci TH, "New techniques in Fourier transform nuclear magnetic resonance." Doctor of Philosophy dissertation, Faculty of Physical Sciences, University of Oxford, England, 1982; 151 pages.