

Medical Physics - 2014 Student publications, abstracts, and presentations

Student Supported Research (underlined)

Peer-reviewed publications: 12

1. Yildiz A, Quetscher C, Dharmadhikari S, Chmielewski W, Glaubitz B, Schmidt-Wilcke T, Edden R, Dydak U, Beste C (2014). Feeling safe in the plane: neural mechanisms underlying superior action control in airplane pilot trainees — a combined EEG/MRS study. *Human Brain Mapping (in press)*
2. Long Z, Jiang YM, Li XR, Fadel W, Xu J, Yeh CL, Long LL, Luo HL, Harezlak J, Murdoch JB, Zheng W, Dydak U (2014). Vulnerability of Welders to Manganese Exposure—A Neuroimaging Study, *NeuroToxicology*, Available online 27 March 2014, ISSN 0161-813X
3. Long Z, Li XR, Xu J, Edden RA, Qin WP, Long LL, Murdoch JB, Zheng W, Jiang YM, Dydak U (2014). Thalamic GABA Predicts Fine Motor Performance in Manganese-Exposed Smelter Workers. PLoS One. 2014 Feb 4;9(2):e88220. PMID 3913772.
4. Cao N, Cao M, Chin-Sinex H, Mendonca M, Ko S-Chu, Stantz KM. Monitoring the effects of Anti-angiogenesis on the Radiation Sensitivity of Pancreatic Cancer Xenografts Using Dynamic Contrast-Enhanced Computed Tomography. *International Journal of Radiation Oncology, Biology, Physics* 88(2):412-8, 2014.
5. Srivastava SP, Das IJ, Andrews J, Cheng CW, Dose perturbation due to metallic breast expander in electron and photon beam treatment of breast cancer, *J Radiat Oncol*, 3, 65-72, 2014; DOI: 10.1007/s13566-013-0109-4.
6. Lea WB, Tapp KN, Tann M, Hutchins GD, Fletcher JW, Johnson MS. Microsphere localization and dose quantification using positron emission tomography/CT following hepatic intraarterial radioembolization with yttrium-90 in patients with advanced hepatocellular carcinoma. *J Vasc Interv Radiol*. 2014 Oct;25(10):1595-603. doi: 10.1016/j.jvir.2014.06.028. Epub 2014 Aug 23. PubMed PMID: 25156647.
7. Tapp KN, Lea WB, Johnson MS, Tann M, Fletcher JW, Hutchins GD. The impact of image reconstruction bias on PET/CT 90Y dosimetry after radioembolization. *J Nucl Med*. 2014 Sep;55(9):1452-8. doi: 10.2967/jnumed.113.133629. Epub 2014 Jun 30. PubMed PMID: 24982437.
8. Srivastava SP, Cheng CW, Das IJ. Image Guidance-Based Target Volume Margin Expansion in IMRT of Head and Neck Cancer. *Technology in cancer research & treatment*, 2014
9. Specht A, Weisskopf M, Nie LH* (2014). Portable XRF Technology to Quantify Pb in Bone *In Vivo*. *Journal of Biomarkers*. Volume 2014 (2014), Article ID 398032, <http://dx.doi.org/10.1155/2014/398032>

10. Liu Y, Byrne P, Wang H, Koltick D, Zheng W, **Nie LH*** (2014). A Compact DD Neutron Generator-based NAA System to Quantify Manganese (Mn) in Bone *In Vivo*. *Physiological Measurement*, 35: 1899-1911
11. Quetscher C, Yildiz A, Dharmadhikari S, Glaubitz B, Schmidt-Wilcke T, Dydak U, Beste C. Striatal GABA-MRS predicts response inhibition performance and its cortical electrophysiological correlates. *Brain Struct Funct*. 2014 Aug 26 [Epub ahead of print],
12. Benjamin Fahimian, Junqing Wu*, **Huanmei Wu**, Xing Lei, Dual Gated Volumetric Modulated Arc Therapy, *Journal of Radiation Oncology* 9:209-216, doi:10.1186/1748-717X-9-209, 2014.

Published abstracts and presentations: 33

1. **Nie LH**, Liu YZ, Koltick D, Byrne P, Zheng W. A Compact DD Neutron Generator-based NAA System to Quantify Mn in Bone *In Vivo*. The 23rd International Conference on Application of Accelerators in Research and Industry (CAARI 2014), May 25-30, 2014, San Antonio, Texas, (oral presentation, invited speaker); abstract published in conference proceeding
2. Liu YZ, Koltick DS, Zheng W, **Nie LH**. A Novel Transportable Neutron Activation Analysis System to Quantify Manganese in Bone *In Vivo*: System Setup and Validation. The 24th Annual Meeting of The International Society of Exposure Science (ISES 2014), Oct.12-16, 2014, Cincinnati, Ohio (poster); abstract published in conference proceeding
3. Specht A, Weisskopf M, **Nie LH**. Calibration and Improvements of a Portable XRF Technology to Quantify Lead in Bone *In Vivo*. The 24th Annual Meeting of The International Society of Exposure Science (ISES 2014), Oct.12-16, 2014, Cincinnati, Ohio (poster); abstract published in conference proceeding
4. Liu YZ, Zheng W, **Nie LH**. Validation of a Neutron Activation Analysis (NAA) System to Quantify Manganese *In Vivo*. NIOSH PRF Symposium (2014), Oct.9-10, Cincinnati, Ohio (Oral presentation)
5. **Nie LH**, Liu YZ, Byrne P, Koltick D, Zheng W. A Compact DD Neutron Generator-based NAA System to Quantify Mn in Bone *In Vivo*. The 4th Lead Collaboration Consortium (LCC) Bi-annual Meeting (2014), June.5-6, Hamilton, Ontario (oral presentation, invited speaker)
6. Specht A, Weisskopf M, **Nie LH**. Portable XRF Technology to Quantify Lead in Bone *In Vivo*. The 4th Lead Collaboration Consortium (LCC) Bi-annual Meeting (2014), Hamilton, Ontario (oral presentation)
7. Quetscher C, Yildiz A, Dharmadhikari S, Glaubitz B, Schmidt-Wilcke T, **Dydak U**, Beste C. Striatal GABA levels predict response inhibition performance and its cortical electrophysiological correlates. *Annual Meeting of the Society for Neuroscience, Washington, DC, November 15-19, 2014*
8. Rosenthal FS, Ward E, Zauber SE, Dharmadhikari S, Snyder S, Bainter J, Ma R, Long Z, Yeh CL, Bowler R, **Dydak U**. Deficits in Neurological and Neuropsychological Function vs. Cumulative Exposure to Manganese in Production Welders. *ISEE 2014*
9. Ma R, Stock AK, Zauber SE, Murdoch JB, Dharmadhikari S, Long Z, Beste C, **Dydak U**. Manganese Induced Changes In Thalamic GABA Levels Influence

- Cognitive and Motor Performance. *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22:63.
10. Yeh CL, Zauber SE, Snyder S, Long Z, **Dydak U**. Motor and Cognitive Processing Networks show increased Manganese Accumulation in Metal Workers. *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22:2831.
 11. Dharmadhikari S, Yildiz A, Quetscher C, Chmielewski W, **Dydak U**, Beste C. Higher Striatal GABA Relates To A More Serial And Efficient Mode Of Action Cascading And Stronger Attentional Gating In Airplane Pilots. *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22:4671.
 12. Dharmadhikari S, Casjens S, Glaubitz B, Lehnert M, Quetscher C, Lotz A, Brüning T, Schmidt-Wilcke T, Beste C, Pesch B, Woitalla D, **Dydak U**. Correlation of GABA Levels and Motor Performance in Parkinson's disease. *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22:3776.
 13. Srivastava SP, Cheng CW, Das IJ. The Effect of Slice Thickness on Target and Organs-at-Risk Volumes, Dosemetric coverage and Radiobiological Impact in IMRT Planning, *International journal of radiation oncology, biology, Physics* 90(1):S867, 2014
 14. S Srivastava, **C Cheng**, **I Das**. **The Effect of Slice Thickness On IMRT Planning**, *Medical Physics* 06/2014; 41(6):297-297.
 15. S Srivastava, **C Cheng**, **I Das**. **Impact of Calculation Grid Size On Dosimetry and Radiobiological Parameters for Head and Neck IMRT**. *Medical Physics* 06/2014; 41(6):330-331. DOI:10.1118/1.4888787
 16. Alsanea F, Moskvin V **Stantz K***. Exploring Radiation Acoustics CT Dosimeter Design Aspects for Proton Therapy. *Med. Phys.* 41:382, 2014 (Selected for THERAPY CAMPUS POSTER Award
 17. Roth A, Krutulis M, Verleker A, **Stantz K**. Verification of Photoacoustic Computed Tomography Perfusion Imaging Using DCE-CT. *Med. Phys.* 41, 449, 2014
 18. Sick J, Alsanea F, Rancilio N, Stantz K. A Platform and Phantom Model for Photoacoustic Imaging in Combination with CT. *Med. Phys.* 41:165, 2014
 19. Jenna Burnett; Justin Sick; Marc Mendonca; and Keith Stantz, "Validating Hemoglobin Saturation and Dissolved Oxygen in Tumors using the OxyLab Probe and Photoacoustic Imaging" (August 7, 2014). *The Summer Undergraduate Research Fellowship (SURF) Symposium*. Paper 115.
 20. **Ma R**, Stock AK, Zauber SE, Murdoch JB, **Dharmadhikari S**, **Long Z**, Beste C, **Dydak U**. Manganese Induced Changes In Thalamic GABA Levels Influence Cognitive and Motor Performance. *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22 – **oral presentation, trainee award**
 21. **Yeh CL**, Zauber SE, Snyder S, **Long Z**, **Dydak U**. Motor and Cognitive Processing Networks show increased Manganese Accumulation in Metal Workers. *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22 (**trainee award**)
 22. **Dharmadhikari S**, Casjens S, Glaubitz B, Lehnert M, Quetscher C, Lotz A, Brüning T, Schmidt-Wilcke T, Beste C, Pesch B, Woitalla D, **Dydak U**. Correlation of GABA Levels and Motor Performance in Parkinson's disease. *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22 (**trainee award**)

23. **Dharmadhikari S**, Yildiz A, Quetscher C, Chmielewski W, **Dydak U**, Beste C. Higher Striatal GABA Relates To A More Serial And Efficient Mode Of Action Cascading And Stronger Attentional Gating In Airplane Pilots. *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22
24. **Long Z**, Jiang YM, Li XR, Xu J, **Yeh CL**, Long LL, Zheng W, Murdoch JB, Dydak U. Increased Thalamic GABA and Decreased Glutamate-Glutamine in Chronic Manganese-exposed Metal Workers and Manganism Patients. *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22 (**trainee award**)
25. **Dydak U**, Ward EJ, **Ma R**, Snyder S, Zauber SE, Murdoch JB, **Long Z**, Rosenthal F. Occupational Manganese Exposure Levels Correlate with Brain GABA Levels. Accepted for presentation at *Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 12-16 2014. Proc. Intl. Soc. Mag. Reson. Med.* 22
26. Adams S, Bowler RM, Garcia R, Moriyasu M, Kornblith E, Gocheva V, **Ma R**, **Dharmadhikari S**, **Yeh CL**, Zauber SE, Snyder S, **Long Z**, **Dydak U**. *The Cognitive Function of Manganese-Exposed Active Welders and Unexposed Controls*", Poster presentation, 26th APS Annual Convention, San Francisco, CA, USA, May 22-25, 2014 .
27. **Ma R**, **Yeh CL**, Ward E, **Long Z**, Murdoch JB, **Snyder S**, Zauber SE, Rosenthal F, **Dydak U**. GABA Levels Correlate with Exposure Levels and Brain Deposition of Manganese in US Welders. *Society of Toxicology 53rd annual meeting, Phoenix, AZ, USA, March 10-14 2014. Toxicol Sci suppl.*
28. **Dydak U**, Jiang YM, Li XR, Long LL, Zheng W, Murdoch JB, **Long Z**. Increased Thalamic GABA in Chronic Manganese-Exposed Metal Workers and Manganism Patients. *Society of Toxicology 53rd annual meeting,, Phoenix, AZ, USA, March 23-27 2014. Toxicol Sci suppl.* Xxx
29. **Yeh CL**, McGlothlan JL, Ward E, **Dharmadhikari S**, Snyder S, **Long Z**, Schneider JS, Guilarte TR, **Dydak U**. Comparison of In Vivo Manganese Accumulation in Non-Human Primate and Human Brains. *Society of Toxicology 53rd annual meeting,, Phoenix, AZ, USA, March 23-27 2014. Toxicol Sci suppl.* Xxx
30. **Dharmadhikari S**, **Ma R**, **Long Z**, **Yeh CL**, Snyder S, Zauber SE, Garcia R, Moriyasu M, Bowler RM, Murdoch JB, **Dydak U**. Manganese Neurotoxicity: In Vivo GABA Levels Correlate with Motor Deficits in US Welders. *Society of Toxicology 53rd annual meeting, Phoenix, AZ, USA, March 23-27 2014. (SOT Student travel award)*
31. **Long Z**, **Yeh CL**, Li XR, **Snyder S**, Zauber SE, Jiang YM, **Dydak U**. Vulnerability of Frontal Cortex to Chronic Manganese Exposure in Welders. *Society of Toxicology 53rd annual meeting, Phoenix, AZ, USA, March 10-14 2014. Toxicol Sci suppl.* Xxx
32. **Specht A**, Weisskopf M, **Nie LH**. Calibration and improvement of a portable XRF technology to quantify lead in bone in vivo. Abstract accepted for the SOT 2014 annual meeting, Phoenix, Arizona, Mar. 23-27, 2014
33. **Liu Y**, Koltick D, Zheng W, **Nie LH**. Development of a transportable neutron activation analysis system to quantify manganese in bone in vivo — system setup and validation. Abstract accepted for the SOT 2014 annual meeting, Phoenix, Arizona, Mar. 23-27, 2014