## Ted Gerstle-Round 21

# MRI-guided High Intensity Focused Ultrasound-controlled hyperthermia to activate thermosensitive liposomal doxorubicin to treat rhabdomyosarcoma (RMS) in a mouse model

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**Publications**

1. Siddiqui M, Dang N, King J, Rahn J, Robbins S, Foltz W, Piorkowska K, Dunne M, Waspe AC. And Pichardo S. Feasibility of hyperthermia induction in subcutaneous tumours in mice using MRI guided Focused Ultrasound and drug delivery using thermosensitive liposomes. Int J Hyperthermia. Submitted June 2021 awaiting acceptance.

2. Wunker C, Piorkowska K, Keunen B, Babichev Y, Wong S, Regenold M, Pichardo S, Allen C, Waspe AC, Foltz W, Gerstle JT and Gladdy RA. Magnetic Resonance guided high intensity focused ultrasound generated hyperthermia is a feasible treatment method in a localized rhabdomyosarcoma murine model. JOVE methodology. In preparation.

3. Wunker C, Piorkowska K, Keunen B, Babichev Y, Wong S, Regenold M, Demicco E, Guidos C, Drake J, Pichardo S, Allen C, Waspe AC, Foltz W, Gerstle JT and Gladdy RA. Effect of Magnetic Resonance Image Guided Focused Ultrasound Generated Hyperthermia in Combination with Thermosensitive and Non-Thermosensitive Doxorubicin on Tumor Growth and the Immune Microenvironment of Rhabdomyosarcoma in an Immunocompetent Murine Model. In preparation to Clinical Cancer Research.

**Abstracts and Conference Presentations**

4. Dunne, M. Heat Shock Protein Inhibitor-Containing Thermosensitive Liposomes For Combination Therapy With Thermodox And Hyperthermia. Society For Thermal Medicine, 36th Annual Meeting. May 2019.

5. Siddiqui M, Engler S, Macdonald M, Loree-Spacek J, Tan J, Raisbeck S, Morrow E, Lustgarten L, Looi T, Drake JM, Waspe AC, Allen C, Curiel L, Foltz W, Curiel L, Pichardo S (2019). Multisite Software Platform Of MRI-Guided Focused Ultrasound Hyperthermia Applications. 36th Annual Meeting Of The Society For Thermal Medicine, St. Pete, Florida, Apr 29 – May 2, 2019.

6. Wunker C, Piorkowska K, Keunen B, Waspe A, Babichev Y, Foltz W, Regenold M, Dunne M, Siddiqui M, Allen C, Pichardo J, Gerstle JT, Gladdy RA (2019). Some Like It Hot! MRgHIFU Hyperthermia And Thermosensitive Doxorubicin As A Treatment For Rhabdomyosarcoma. Terry Fox Research Institute Ontario Node Symposium – Novel Cancer Targets And Emerging Therapies, Toronto, Ontario, Dec 12, 2019.

7. Keunen B, Siddiqui M, Krasnichuk C, Wunker C, Piorkowska K, Babichev Y, Foltz W, Waspe AC, Gladdy R, Gerstle JT, Pichardo S (2020). Proteus: An Open Source Software Platform For Modulated Therapy With Mrghifu. 18th Annual Imaging Network Ontario Symposium, Virtual Meeting Mar 26-27, 2020.

8. Wunker C, Piorkowska K, Keunen B, Waspe A, Babichev Y, Foltz W, Regenold M, Dunne M, Siddiqui M, Allen C, Pichardo J, Gerstle JT, Gladdy RA (2020). MRgHIFU and Thermosensitive Doxorubicin as a Treatment for Rhabdomyosarcoma. University of Toronto Gallie Day, Virtual Meeting May 8, 2020.

9. Wunker C, Piorkowska K, Keunen B, Waspe A, Babichev Y, Foltz W, Regenold M, Dunne M, Siddiqui M, Allen C, Pichardo J, Gerstle JT, Gladdy RA (2020). #747 Magnetic Resonance Guided High Intensity Focused Ultrasound In Combination With Thermosensitive Liposomal Doxorubicin As A Novel Treatment For Rhabdomyosarcoma. 52nd Congress Of The International Society Of Paediatric Oncology, Virtual Meeting Oct 14-17, 2020.

10. Wong S, Wunker C, Keunen B, Siddiqui M, Piorkowska K, Babichev Y, Foltz W, Gladdy RA, Pichardo S, Waspe AC, and Drake J. A motion compensation algorithm to improve thermometry during MRgHIFU controlled hyperthermia 19th annual Imaging Network of Ontario Symposium. Virtual meeting March 2021.

11. Wunker C, Piorkowska K, Keunen B, Waspe AC, Babichev Y, Foltz W, Regenold M, Dunne M, Siddiqui M, Allen C, Pichardo S, Gerstle JT, and Gladdy RA. MRgHIFU and Thermosensitive Doxorubicin as a treatment for rhabdomyosarcoma. Terry Fox day at the University of Toronto, Gallie day at University of Toronto, IMS Scientific day University of Toronto, Society of virtual meetings 2021.

12. Wong S, Wunker C, Keunen B, Siddiqui M, Piorkowska K, Babichev Y, Foltz W, Gladdy RA, Pichardo S, Waspe AC, and Drake J. A Motion Compensation Algorithm to Improve Thermometry During MRgHIFU Controlled Hyperthermia for Drug Delivery in Oncology. Gallie day at University of Toronto, Garron Family Cancer Centre Research Day at the Hospital for Sick Children Toronto, Ontario, and International Society for Therapeutic Ultrasound Symposium. Gyeongju, Korea. Virtual conferences May- June 2021.

**Invited Presentations (including Grand Rounds)**

none

**Other Knowledge Translation Activities**

*(e.g., public presentations, public media, institutional media spotlights)*

13. Claire Wunker MSc thesis defense, Institute of Medical Science, Supervisor Dr. Rebecca Gladdy (September 8th, 2021)

14. Maryam Siddiqui MSc thesis defense, Department of Biomedical Engineering, University of Calgary, Supervisor Dr. Samuel Pichardo (September 2018-December 2020).

15. Suzanne Wong, MSc thesis student, Institute of Biomedical Engineering, University of Toronto, Supervisors Drs. James Drake and Adam Waspe (September 2019 – Present).

16. Ben Keunen 4th yearco-op student, Department of Computer Sciences and Mathematics, Wilfred Laurier University, Supervisors Drs. James Drake and Adam Waspe (May 2019-August 2020).