Calder D. **Sheagren**

Ph.D. Candidate - Cardiac Magnetic Resonance Imaging

2075 Bayview Ave, Toronto ON, M4N 3M5, Canada

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Education

University of Toronto — *Toronto, ON, Canada*

Ph.D. in Medical Biophysics, Supervisor: Graham Wright — *Sep 2020 - Present*

Project: Evaluation of Emerging Cardiac Magnetic Resonance Biomarkers in the presence of Cardiac Implantable Electronic Devices

University of Chicago — *Chicago, IL, USA*

B.S. in Mathematics with Honors, Supervisor: Erik Shirokoff — *Sep 2016 - Jun 2020*

Project: Atomic Layer Deposition Titanium Nitride and Niobium Nitride for Microwave Kinetic Inductance Detectors

Publications

First-Author Publications

Calder D. Sheagren, Tianle Cao, Jaykumar H. Patel, Zihao Chen, Hsu-Lei Lee, Nan Wang, Anthony G. Christodoulou, and *Graham A. Wright*, "Motion-Compensated T_1 Mapping in Cardiovascular Magnetic Resonance Imaging: A Technical Review." Front. Cardiovasc. Med. 10:1160183. (2023) doi: 10.3389/fcvm.2023.1160183

Calder Sheagren, Peter Barry, *Erik Shirokoff*, and Qing Yang Tang, "Atomic Layer Deposition Niobium Nitride Films for High-Q Resonators", Journal of Low Temperature Physics 199, 875–882 (2020). https://doi.org/10.1007/s10909-020-02336-2

Collaborating-Author Publications

Gregor G. Taylor, Dmitry V. Morozov, Ciaran T. Lennon, Peter S. Barry, **Calder Sheagren**, and *Robert H. Hadfield* , "Infrared single-photon sensitivity in atomic layer deposited superconducting nanowires", Applied Physics Letters 118, 191106 (2021) https://doi.org/10.1063/5.0048799

Peer-Reviewed Conference Proceedings

First-Author Proceedings

Calder D. Sheagren, Brenden Kadota, Jaykumar H. Patel, Mark Chiew, and *Graham A. Wright*, "Accelerated Cardiac Parametric Mapping using Deep Learning-Refined Subspace Models", CMRxRecon Challenge, Statistical Atlases and Computational Modelling of the Heart Proceedings (2023)

Conference Presentations

First-Author Presentations

Quantifying Cardiac Function in the Presence of Implantable Cardioverter Defibrillators with Cardiovascular Magnetic Resonance Imaging: Evaluation in Healthy Volunteers — *San Diego, CA - 2023*

Calder Sheagren, Xiuling Qi, Idan Roifman, and *Graham Wright* — *Rapid Fire Pitch*

Society of Cardiovascular Magnetic Resonance Meeting

A Minimal Cardiac MRI Protocol for Catheter Ablation Planning in Patients with Cardiac Implantable Electronic Devices — *Los Angeles, CA - 2022*

Calder Sheagren, Terenz Escartin, Philippa Krahn, Judi Paulson, Melissa Larsen, Martin Janich, Idan Roifman, and *Graham Wright* — *Oral Power Pitch*

Society of Magnetic Resonance Angiography Meeting

Validation of Automated Topological LGE Thresholding for Peri-Infarct Substrate Characterization — *London, UK - 2022*

Calder Sheagren, Terenz Escartin, Philippa Krahn, Jaykumar Patel, Fumin Guo, and *Graham Wright* — *Oral Presentatation*

International Society of Magnetic Resonance in Medicine Meeting

Fully-Automated LGE Thresholding using Weighted Total Variation Denoising and Persistent Homology — *Virtual - 2022*

Calder Sheagren, Terenz Escartin, Philippa Krahn, and *Graham Wright* — *E-poster*

Society of Cardiovascular Magnetic Resonance Meeting

Open-source Tools for Topological Data Analysis — *Virtual - 2021*

Calder Sheagren and *Graham Wright* — *Lightning Talk*

CANARIE Research Software Conference

Atomic Layer Deposition Niobium Nitride Films for High-Q Resonators — *Milan, Italy - 2019*

Calder Sheagren, Alexander Anferov, Peter Barry, David Schuster, *Erik Shirokoff*, and Qing Yang Tang — *Poster*

Low Temperature Detectors Symposium

Superconducting Thin Film Atomic Layer Deposition Titanium Nitride for Microwave Resonators — *Boston, MA - 2019*

Calder Sheagren, Peter Barry, Ritoban Basu Thakur, Rong Nie, *Erik Shirokoff*, and Qing Yang Tang — *Talk*

American Physical Society March Meeting

Applications of Thin Film Atomic Layer Deposition Superconducting Titanium Nitride to Astronomical Measurements — *Chicago, IL - 2018*

Calder Sheagren, Peter Barry, Ritoban Basu Thakur, Rong Nie, *Erik Shirokoff*, and Qing Yang Tang — *Poster*

American Vacuum Society Prairie Chapter Symposium

Collaborating-Author Presentations

Native T1-weighted MRI Indicates Acute Thermal Injury Post-RF Ablation in VT Patients — *Montreal, QC - 2023*

Terenz Escartin, **Calder Sheagren**, Maria Terricabras, Idan Roifman, Graham Wright, and *Christopher Cheung* — *Digital Poster*

Canadian Cardiovascular Conference Vascular Meeting

Hierarchical Segmentation of LGE MRI — *Lyon, FR - 2023*

Fumin Guo, **Calder Sheagren**, Jaykumar Patel, and *Graham Wright* — *MYOSAIQ Challenge Submission*

Functional Imaging and Modelling of the Heart

2D/3D Image Registration for Guidance of Endovascular Interventions in Tibial Vessels — *London, ON - 2023*

Moujan Saderi, Jaykumar Patel, **Calder Sheagren**, Trisha Roy, and *Graham Wright* — *Pitch-and-Poster*

Imaging Network Ontario Symposium

3D Multiscale Weighted Total Variation Registration for MR Image-Guided Catheter Interventions — *London, UK - 2022*

Jaykumar Patel, **Calder Sheagren**, Saqeeb Hassan, Fatemeh Rastegar Jooybari, Christopher Macgowan, and *Graham Wright* — *Digital Poster*

International Society of Magnetic Resonance in Medicine Meeting

3D Motion Compensation with Cone Trajectories - in silico Validation Using the MR-XCAT Framework — *Virtual - 2022*

Jaykumar Patel, **Calder Sheagren**, Fatemeh Rastegar Jooybari, Saqeeb Hassan, Okai Addy, Christopher Macgowan, and *Graham Wright* — *E-poster*

Society of Cardiovascular Magnetic Resonance Meeting

Awards

MBP Excellence Award — *2020-2024*

University of Toronto Fund — *$21k CAD*

Mary H. Beatty Fellowship Award — *2021-2022*

University of Toronto — *$10k CAD*

Teaching

UToronto MBP 1201H: Introduction to Biostatistics — *Aut 2022, Aut 2023*

Teaching Assistant — *2022: 4.17/5, N=26.*

UChicago MATH 131-132: Introductory Calculus — *Aut 2017, Win 2020*

Junior Tutor

UChicago MATH 195-196: Multivariable Calculus and Linear Algebra — *Spr 2018, Win 2020*

Grader

UChicago MATH 151-153: Calculus — *Win/Spr/Aut 2018, Win/Spr 2019*

Course Assistant

Outreach

Code Reviewer - Magnetic Resonance in Medicine *2023-Present*

Organizing Committee Member - ISMRM Motion Correction Workshop *2023 - 2024*

Early Career Committee Member - Society of Magnetic Resonance Angiography *2022 - Present*

International Student Representative - Medical Biophysics Graduate Student Association *2023-2024*

Communications Representative - Medical Biophysics Graduate Student Association *2022-2023*

Careers in Medical Physics Talk - Naperville Central High School *February 2022*

Reviewer - Journal of Vacuum Science and Technology *2021*

Tutor - UToronto Faculty of Medicine Saturday Program *2020-2021*

Member - SRI Student Network *2020-2021*

Mentor - UChicago Math Research Experience for Undergraduates *Summer 2020*

President - UChicago Math Club *2019-2020*

Computational Skills

Competent Python, LaTeX, vim, bash, git
Proficient BART, Julia
Learning GE EPIC, Siemens IDEA, Gadgetron