

# LUIS HENRY GONZALEZ TORRES

819.279.9724 | luis.gonzaleztorres@mail.mcgill.ca | Montreal, QC

Full proficiency in **English, French, and Spanish**, both written and spoken.

## EDUCATION AND HONOURS

<b>Doctor of Medicine, M.D.,C.M., <u>Montreal</u></b>	<b>2021 – Present</b>
McGill University, Faculty of Medicine and Health Sciences	
<ul style="list-style-type: none"><li>Nominations for Outstanding professionalism and Empathy during Clerkship</li></ul>	
<b>Honors Bachelor of Health Science, <u>Ottawa</u></b>	<b>2018 – 2021</b>
University of Ottawa, Faculty of Health Sciences	
<ul style="list-style-type: none"><li>SUMMA CUM LAUDE (Highest academic distinctions)</li><li>Dean's Honour List, 9.72/10.00 cumulative GPA</li></ul>	
<b>Diplôme d'études collégiales en Science, <u>Rouyn-Noranda</u></b>	<b>2016 – 2018</b>
Cégep de l'Abitibi-Témiscamingue	

## MEDICAL SCHOOL ELECTIVES & OBSERVERSHIP

### Medical imaging:

<b>Diagnostic Radiology</b>   Montreal General Hospital, Montreal	Oct-Nov 2023
<b>Nuclear Medicine</b>   Royal Victoria Hospital, Montreal	Nov 2023
<b>Nuclear Medicine</b>   Centre hospitalier de l'Université de Montréal, Montreal	July 2024
<b>Interventional Radiology</b>   Montreal General Hospital, Montreal	Sept-Oct 2024
<b>Pediatric Radiology</b>   Montreal Children Hospital, Montreal	Oct 2024
<b>Diagnostic Radiology</b>   Royal Victoria Hospital, Montreal	Oct-Nov 2024

### Related elective:

<b>Stage SARROS</b>   Hôpital de Rouyn-Noranda, Rouyn-Noranda	July 2022
<b>Respiratory Research</b>   Ste. Anne's Hospital, Sainte-Anne-de-Bellevue	July 2024
<b>Pediatric Orthopedic</b>   Montreal Children Hospital, Montreal	Nov 2024
<b>Thoracic Surgery</b>   Montreal General Hospital, Montreal	Dec 2024
<b>Neurology</b>   Montreal Neurological Hospital	Jan 2025

## SCHOLARSHIPS AND GRANTS

<b>NIIC Scholarship Program (SIIM and RSNA)</b>	<b>2024</b>
<ul style="list-style-type: none"><li>Funding to attend the National Imaging Informatics Course (NIIC), a full-time week-long course on the fundamentals of medical imaging informatics.</li></ul>	
<b>Medical Student Society (MSS) Conference Funding Bursary</b>	<b>2023</b>
<ul style="list-style-type: none"><li>Sponsored waiver for the CAR 2023 conference fees</li></ul>	
<b>Clarke McLeod Scholarship - Anatomy Prosection Award (McGill)</b>	<b>2023</b>
<ul style="list-style-type: none"><li>Recognized for excellence in anatomy courses, selected to dissect and prepare specimens to grow and improve McGill's Strathcona Human Anatomy Laboratory collection.</li></ul>	
<b>Undergraduate Student Research Awards (NSERC) - 5600\$</b>	<b>2020</b>
<ul style="list-style-type: none"><li>Awarded funding to conduct research at uOttawa in robotics, computer science, and medicine, developing a mathematical kinematic model of a C-Arm and operating table.</li></ul>	
<b>Merit Scholarship (uOttawa)</b>	<b>2018 to 2021</b>
<ul style="list-style-type: none"><li>Recognized for academic excellence and outstanding GPA</li></ul>	
<b>College research award (Fonds de recherche du Québec - Nature et technologies) – 5000\$</b>	<b>2020</b>
<ul style="list-style-type: none"><li>Grant awarded to develop innovative technologies for decontaminating wastewater and conduct analysis on the impact of mining effluents on the boreal forest. During Cégep</li></ul>	

## RESEARCH ACTIVITY

### Peer-Reviewed Research Publications in progress

- Boustros, P., **Gonzalez Torres, L.H.**, Trop, I., Dadour, J.R., “**Teaching CT Protocol to the PGY-2 radiology resident: the Development, Implementation, and Evaluation of a Four-Activity Learning Program**” Submitted to: Canadian Association of Radiologists Journal (Nov, 2024)
- **Gonzalez Torres, L.H.**, Biem, H.J., McInnis, M., Aris, F., [...] San Jose Estepar, R., Ross, B. Dandurand, R.J., “**Reproducibility of the Main Pulmonary Artery to Ascending Aorta (PA:A) Ratio : A ‘Real-World’ Study**” To be Submitted to ATS Scholar Journal

### Abstract/Poster/Presentation:

- Todorova, Z., Savadjev, P., **Gonzalez Torres, L. H.**, & Dandurand, R. J. (2025, April). “**CT scan-derived mean curvature of isophotes (MCI) for the detection of alpha-1 antitrypsin deficiency (AATD)-related emphysema**”. Poster to be present at the Canadian Respiratory Conference, Quebec City.
- Gasbarrino, K., Benjamin, A., Beiko, T., Ramirez-Garcia Luna, J., **Gonzalez Torres, L. H.**, Levasseur, S., [...] & Khan, K. (2024, June). “**A novel approach in vascular imaging: 3D reconstruction from 2D ultrasound via advanced deep learning techniques.**” Presentation at the Image-Guided Therapy Symposium 2024, Montreal.
- **Gonzalez Torres, L. H.**, Biem, H. J., McInnis, M., Aris, F., [...], San Jose Estepar, R., Ross, B., & Dandurand, R. J. (2024). “**Reproducibility of automated and manual determination of the pulmonary artery to aorta ratio (PA:A) of "real-world" CT scans**”. European Respiratory Journal. <https://doi.org/10.1183/13993003.congress-2024.PA1657>
- Pang, R., **Gonzalez Torres, L. H.**, [...], & Dandurand, R. J. (2024). “**Characterizing chronic obstructive pulmonary disease using alpha-1 antitrypsin genotype, spirometry, and respiratory oscillometry**”. American Journal of Respiratory and Critical Care Medicine. [https://doi.org/10.1164/ajrccm-conference.2024.209.1\\_meetingabstracts.a4531](https://doi.org/10.1164/ajrccm-conference.2024.209.1_meetingabstracts.a4531)
- Fotovati, M., Medina, P. F., Pang, R., **Gonzalez Torres, L. H.**, [...], & Dandurand, R. J. (2024). “**Transforming asthma management: Advancing towards precision care with spectral and intra-breath oscillometry.**” American Journal of Respiratory and Critical Care Medicine. [https://doi.org/10.1164/ajrccm-conference.2024.209.1\\_meetingabstracts.a2773](https://doi.org/10.1164/ajrccm-conference.2024.209.1_meetingabstracts.a2773)
- **Gonzalez Torres, L. H.**, Al Zoubi, F., & Pascal, F. (2021, March). “**Machine learning-derived guidelines for operating room efficiency**”. Poster presented at Research Day, University of Ottawa

### **Research Activity:**

#### **1. SONARO AI Internship 2023-present**

- Build an U-Net AI model for 3D reconstructions of carotid vascular structures from 2D ultrasound images to better predict the risk of thromboembolic events. Status: Article in progress

#### **2. Research Student with Dr. Dandurand - McGill**

- Data collection, analysis, and literature review. Performed computational analysis of radiomics for CT scans acquire in the community setting. See the above publications
- Utilized TotalSegmentator, 3D Slicer.org, Python, R, OsiriX MD, and MATLAB; gained proficiency in handling DICOM/NIfTI files and programming for imaging analysis.

#### **3. Undergraduate Research Student with Dr. Fallavollita – uOttawa**

- Apply machine learning techniques to surgical room data to optimize parameters for more efficient orthopedic surgeries, using TensorFlow and Scikit-Learn in Python.

- Developed a mathematical model of a 6 degrees of freedom (DOF) mobile C-arm and a 4-DOF operating table as an integrated kinematic chain to support research in computer-assisted interventions. Code available at DOI: [10.5281/zenodo.13293120](https://doi.org/10.5281/zenodo.13293120)

## TEACHING & MENTORING EXPERIENCE

### **Educational Medical Data Processing tutorials** **2024 - Present**

Medical Image Computing and Computer assisted Intervention Society (MICCAI)

- Wrote tutorials available on GitHub, introducing coding and medical image processing in Python through easy-to-follow IPython Notebooks.

### **Undergraduate Anatomy teaching Assistant** **2023 - Present**

McGill University, Anatomy and Cell Biology department

- Taught in Anatomy Laboratories for pre-clerkship medical students and nursing students' courses (NUR 235, 338 & 534), 5 sessions/year, 30-40 students.

### **Academic Immersion in Healthcare (AIH) Coordinator** **2022 - Present**

McGill University

- Organize and lead suturing and ultrasound workshops for high school students, 4x/year with 30 students per class, to foster early interest in healthcare careers.

### **Medical Student Mentor** **2022 - Present**

ACE buddy program, McGill University

- Mentored 1st and 2nd-year medical students, hosting review sessions and exam preparation, providing study strategies, advising on work-life balance, offering guidance through medical school, and emotional support during high-stress periods.

### **Pre-Med Student Mentor** **2022-2024**

Diversity and Inclusion in Medical Education (DIME) program, McGill University

- Provided guidance to BIPOC and underrepresented MD applicants interested in healthcare, guiding them on post-secondary pathways, careers in medicine, & shadowing opportunities.

## LEADERSHIP EXPERIENCE

### **McGill Radiology Interest Group (MRIG)** **2023 - Present**

Medical Students Representative Med3/Med4

- Created a workshop: "Build Your Own Pneumonia Chest X-ray Detection AI" introducing to a group of 10 medical students the core concepts of artificial intelligence and machine learning in medical imaging and intersection with computer science
- Facilitated communication of our events within our cohort and with interest groups at universities across the province, promoting radiology among medical students through a series of coordinated educational events.

### **McGill Ultrasound Interest Group (MUSIG)**

Vice-President Sonography Games

**2022 - Present**

- Organize the Sono Cup, an inter-university "Ultrasound Olympics" with diverse games and challenges designed to enhance medical students' ultrasound skills and foster collegiality through friendly competition.

### **McGill Medicine admission committee** **2023 - Present**

Reviewer & interviewer

- Review medical school applicants' CVs and conduct candidate interviews, evaluating academic potential, personal qualities, and alignment with our program's values.

## Montreal Oscillometry Summer Seminar

Co-Organizer

2023 - 2024

- Organize the 7<sup>th</sup> and 8<sup>th</sup> Montreal Oscillometry Seminars, coordinating venue logistics, audiovisual setup, and catering to create a seamless experience for > 100 attendees.

## WORK AND VOLUNTERING

### Assistant Technical Director & Soccer Coach

2016-2022

Club de soccer Boréal de Rouyn-Noranda

- Manage scheduling logistics for training grounds and supervise sessions for youth players aged 8 to 16, focusing on skill development, enjoyment, and safety.
- Head and Assistant Coach for U8 to U16 competitive teams, leading practices and strength training 3x/week. Building tactical skills, teamwork, and strong community belonging through volunteering with the local food bank and thrift store.

### Stage SARROS

Summer 2021

CISSS-AT, Hôpital de Rouyn-Noranda

- Summer immersion gaining clinical experience with general practitioners and specialists, learning about the unique challenges of rural medicine.

### Watercourse and Land Use Planning Technician

Summer 2019

Ville de Rouyn-Noranda

- Led the Quebec Lake-Monitoring Program, conducted field surveys, enforced municipal bylaws on wetlands and water bodies, and contributed to updating the municipal watercourse management regulations.
- Managed inspection and maintenance logistics for La Route Verte bike pathway within the Rouyn-Noranda territory

### Environmental Technician

Summer 2018

Ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC)

- Led the summer pesticide control program, ensuring compliance with the Quebec Pesticides Act in the Abitibi-Témiscamingue region, drafting reports and noncompliance statements, and overseeing proper pesticide storage and handling.

## INTERESTS AND HOBBIES

### Computer science/Coding: Longtime passion for technology and programming

- Proficient in Python, MATLAB, and R for data analysis, AI/ML projects and general-purpose coding.
- Competed in machine learning challenges on Kaggle and the Medical Imaging and Data Resource Center (MIDRC) Mastermind Challenge 2023-2024
- Maintains a GitHub repository with open-source code
- Attend McGill initiative in Computational Medicine workshops
- Developed many projects: websites, Chrome extension, mobile apps/widgets, & more..

### Intramural sports:

- Established and competed in recreational and competitive sports teams: basketball, volleyball, deck hockey, ultimate frisbee, and soccer, throughout CEGEP, university, and med school.

### Trail Running:

- Outdoor enthusiast with experience organizing annual local races and maintaining forest trails in the wilderness of Abitibi-Témiscamingue. Participated in numerous trails running events.

Product Tester - Under Armour

- Provide feedback on athletic sportswear by testing unreleased items in real-world conditions and offering insights to support product development and improvement.

PROFESSIONAL DEVELOPMENT & CERTIFICATIONS	
Independent Practitioner (IP) PoCUS, Canadian point of care ultrasound society	In progress
CS50x - Introduction to Computer Science, Harvard University	2024
Imaging AI Certificate Program, Radiological Society of North America (RSNA)	2024
National Imaging Informatics Course, Society for Imaging Informatics in Medicine & RSNA	2024
Basic Life Support, Heart and Stroke Foundation	2024
Standard First Aid Level-C CPR & AED (Intermediate), St. John Ambulance	2023
TCPS 2: CORE-2019 (Course on Research Ethics), Canada Panel on Research Ethics	2019

Canadian Association of Radiologists: CAR 2023 and 2024 Attendee and Medical Student Member  
Canadian Association for Interventional Radiology: Medical Student Member  
Radiological Society of North America: RSNA 2024 Attendee and Medical Student Member  
Society for Imaging Informatics in Medicine (SIIM): Student Member  
Medical Image Computing and Computer assisted Intervention Society (MICCAI): Student Member  
European Respiratory Society (ERS) Congress 2024: Attendee and Medical Student Member  
Radiopaedia 2024