LUIS HENRY GONZALEZ TORRES

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

EDUCATION AND HONOURS

Doctor of Medicine, M.D., C.M., Montreal **2021 – Present**
McGill University, Faculty of Medicine and Health Sciences
- Nominations for Outstanding professionalism and Empathy during Clerkship

Honours Bachelor of Health Science, B. Sc., Ottawa **2018 – 2021**
University of Ottawa, Faculty of Health Sciences
- GPA 9.72/10
- SUMMA CUM LAUDE & Dean's Honour List

SCHOLARSHIPS AND GRANTS

NIIC Scholarship Program (SIIM and RSNA) **2024**
- Awarded to attend the National Imaging Informatics Course (NIIC), a full-time week-long course on the fundamentals of medical imaging informatics.

Clarke McLeod Scholarship - Anatomy Prosection Award (McGill) **2023**
- Recognized for excellence in anatomy courses, selected to dissect and prepare specimens to expand and improve McGill's Strathcona Human Anatomy Laboratory collection.

Undergraduate Student Research Awards (NSERC) **2020**
- 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.

Merit Scholarship (uOttawa) **2018 – 2021**
- Recognized for academic excellence and outstanding GPA.

College Research Award (Fonds de recherche du Québec - Nature et technologies) **2020**
- Awarded to develop innovative technologies for decontaminating wastewater and conduct analysis on the impact of mining effluents on the boreal forest.

RESEARCH ACTIVITY

Research Projects

First author, Interventional Radiology Research **09/2024 – Present**
Supervisor: Dr. Louis Martin Boucher, Department of Radiology, McGill University, Montreal, QC
- Conducting a systematic review to evaluate the outcomes of transarterial chemoembolization (TACE) and radioembolization (TARE) in the treatment of colorectal cancer metastases to the liver. [Literature Screening Phase]

Co-author, Educational Quality Improvement **07/2024 – Present**
Supervisor: Dr. Joseph Rudy Dadour, Département de radiologie, Université de Montréal, QC
- Conducted a literature review and co-authored a scientific article on developing and implementing educational modules for teaching protocoling in the radiology residency program of Université de Montréal [Manuscript currently under review at *Academic Radiology*]

Co-author/intern, AI Driven Vascular Imaging Reconstruction, SONARO AI **10/2023 – Present**
Supervisor: Dr. Kashif Khan, Faculty of Medicine, McGill University, Montreal, QC
- Building a U-Net artificial intelligence model for 3D reconstructions of carotid vascular structures from 2D ultrasound images to better predict the risk of thromboembolic events. [Manuscript Writing Phase]

Research assistant, Centre for Respiratory Research **03/2023 – Present**
Supervisor: Dr. Ronald Dandurand, Division of Respirology, McGill University, Montreal, QC

- Contribute to the literature review, data collection and analysis for several ongoing research projects, including: "*Transforming asthma management: Advancing towards precision care with spectral and intra-breath oscillometry*", "*Automated measurement of the 3D main pulmonary artery to ascending aorta (PA:A) ratio and its association with COPD exacerbation: A real-world study*", "*Characterizing COPD using genotyping, spirometry, respiratory oscillometry, quantitative computed tomography, and patient-reported outcomes*".
- Performed computational analysis of various radiomics for thoracic CT scans acquired in the community setting. [Ongoing work on new radiomics]
- Utilized TotalSegmentator, 3D Slicer.org, Python, R, OsiriX MD, and MATLAB; gained proficiency in handling DICOM/NIfTI files and programming for medical image analysis.

First author, NSERC and Honours thesis Research in computational medicine **03/2020 – 05/2021**
Supervisor: Dr. Pascal Fallavollita, Faculty of Health Sciences, University of Ottawa, ON

- Applied machine learning to operating room data (patient demographic, anesthesia used, etc..) to optimize and enhance orthopedic surgery efficiency, using TensorFlow and Scikit-Learn in Python.
- Developed a mathematical model for 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

Publications/ Posters / Conference

1. Boustros, P., **Gonzalez Torres, L.H.,** Fortin, F., Trop, I., Dadour, J.R. (2024). **Teaching CT Protocol to the PGY-2 Radiology Resident: the Development, Implementation, and Evaluation of a Four-Activity Learning Program.** *Academic Radiology* [Submitted, pending review]

2. 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.** 17th Canadian Respiratory Conference, Quebec City [Submitted, pending review]

3. Gasbarrino, K., […], **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.** [Oral presentation] INOVAIT Image-Guided Therapy Symposium 2024, Montreal, QC

4. **Gonzalez Torres, L. H.,** Biem, H. J., McInnis, M., Aris, F., […], San Jose Estepar, R., & 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.* 64 (68), PA1657. https://doi.org/10.1183/13993003.congress-2024.PA1657

5. **Gonzalez Torres, L. H.,** Biem, H. J., McInnis, M., Aris, F., […], San Jose Estepar, R., & Dandurand, R. J. (2024, September) **Reproducibility of automated and manual determination of the pulmonary artery to aorta ratio (PA:A) of 'real-world' CT scans.** [Poster presentation]. 2024 European Respiratory Society Congress, Vienna, Austria.

6. 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.* (209), A:4531. https://doi.org/10.1164/ajrccm-conference.2024.209.1_meetingabstracts.a4531

7. 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.* (209), A:2773. https://doi.org/10.1164/ajrccm-conference.2024.209.1_meetingabstracts.a2773

8. **Gonzalez Torres, L. H**., Al Zoubi, F., & Pascal, F. (2021, March) **Machine learning-derived guidelines for operating room efficiency** [Poster presentation] 2021 Research Day, University of Ottawa, ON

luis.gonzaleztorres@mail.mcgill.ca | lgonzaleztorres.com | Montreal, QC

LEADERSHIP & TEACHING EXPERIENCE

Tutorial Creator, Educational Medical Data Processing **2024 – Present**
Medical Image Computing and Computer Assisted Intervention Society (MICCAI)

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

Undergraduate Anatomy Teaching Assistant **2023 – Present**
Anatomy and Cell Biology Department, McGill University, Montreal, QC

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

Class Representative, McGill Radiology Interest Group (MRIG) **2023 – Present**
McGill Medical Student Association, McGill University, Montreal, QC

- Created a workshop titled "*Build Your Own Pneumonia Chest X-ray Detection AI,*" introducing 10 medical students to core concepts of artificial intelligence and machine learning in medical imaging during a hands-on project & pizza social event.
- Facilitate communication for various events within our cohort and with interprovincial university radiology interest groups, promoting radiology among medical students through a series of educational events.

Vice-President, McGill Ultrasound Interest Group (MUSIG) **2023 – Present**
McGill Medical Student Association, McGill University, Montreal, QC

- 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.

CV Reviewer & Interviewer, **Medicine Admission Committee** **2023 – Present**
Faculty of Medicine and Health Sciences, McGill University, Montreal, QC

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

Co-Organizer, Montreal Oscillometry Summer Seminar **2023 – 2024**
McGill University Health Center, Montreal, QC

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

MENTORING & COMMUNITY ENGAGEMENT

Coordinator, Academic Immersion in Healthcare (AIH) **2022 – Present**
McGill University, Montreal, QC

- 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**
Ambassadors for Comprehensive Education (ACE) Program, McGill University, Montreal, QC

- Through the ACE buddy program, mentored 1st & 2nd-year medical students, hosted review sessions and exam preparation, provided study strategies, advised on work-life balance, offering guidance and emotional support through medical school.

luis.gonzaleztorres@mail.mcgill.ca | lgonzaleztorres.com | Montreal, QC

Pre-Med Student Mentor **2022 – 2024**
McGill Mentorships in Healthcare, McGill University, Montreal, QC
- Provided guidance to BIPOC and underrepresented MD applicants interested in healthcare, guiding them on post-secondary pathways, careers in medicine, & shadowing opportunities.

Assistant Technical Director & Soccer Coach **2016 – 2022**
Club de soccer Boréal de Rouyn-Noranda, QC
- Managed 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, led practices and strength training 3x/week. Built on tactical skills, teamwork, and strong community belonging through volunteering with the local food bank and thrift store.

WORK EXPERIENCE

Watercourse and Land Use Planning Technician **2019**
City of Rouyn-Noranda, QC
- Oversaw 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 the La Route Verte bike pathway within the municipality's territory.

Environmental Technician **2018**
Quebec Ministry of the Environment, Wildlife and Parks
- Led the summer pesticide control program, ensuring compliance with the Quebec Pesticides Act in the Abitibi-Témiscamingue region, drafting reports and noncompliance statements, and oversaw proper pesticide storage and handling.

CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

Trainee: Independent Practitioner (IP) PoCUS, Canadian Point of Care Ultrasound Society **In Progress**
Trainee: CS50x - Introduction to Computer Science, Harvard University **2024**
Trainee: Imaging AI Certificate Program, Radiological Society of North America (RSNA) **2024**
Trainee: National Imaging Informatics Course, Society for Imaging Informatics in Medicine & RSNA **2024**
Certificate: Basic Life Support, Heart and Stroke Foundation **2024**
Certificate: Standard First Aid Level-C CPR & AED (Intermediate), St. John Ambulance **2023**
Certificate: TCPS 2, CORE-2019 (Course on Research Ethics), Canada Panel on Research Ethics **2019**
Attendee: 2024 Virtual Radiology Radiopaedia Conference **2024**
Attendee: **CAR 2023 & 2024 Conferences**, Montreal, QC **2023, 2024**
Member: Medical Image Computing and Computer-assisted Intervention Society **2024 – Present**
Member: Canadian Association for Interventional Radiology **2023 – Present**
Member: Radiological Society of North America **2023 – Present**
Member: Canadian Association of Radiologists **2022 – Present**

luis.gonzaleztorres@mail.mcgill.ca | lgonzaleztorres.com | Montreal, QC