About SickKids
The Hospital for Sick Children (SickKids) is one of the largest and most respected paediatric research centres in the world. We are innovators of child health, integrating leading-edge research with healthcare. When you join SickKids, you become part of our community. We share a commitment and determination to fulfill our vision of Healthier Children. A Better World. Don’t miss out on the opportunity to work alongside the world’s best in paediatric research.

Position Description
Post-Doctoral Research Fellow [application link]

We are seeking a post-doctoral fellow to work with the research group of Dr. Chris Macgowan in the Translational Medicine department of the SickKids Research Institute. The fellow will work on a CIHR-funded project, developing MRI methods to quantify cardiovascular physiology before and after birth. Application areas include the MRI assessment of fetal cardiovascular function in congenital heart disease and placental dysfunction, including the effect of interventions on fetal development and postnatal outcomes including neurodevelopment.

The project aims to develop novel MRI acquisition and reconstruction methods that are fast and robust to motion, for assessment of complex fetal anatomy, blood flow and blood oxygenation. This builds on previous work by our group involving accelerated two-dimensional scanning (radial and spiral, golden angle) and reconstruction (compressed sensing) to generate dynamic volumetric imaging of the fetus (slice-to-volume reconstruction). Relevant examples of our technical developments may be found in the following publications and the thumbnail images above:


The successful candidate will develop and validate novel acquisition and reconstruction methods, and design and perform MRI experiments in mechanical flow and motion phantoms, human volunteers, and patients. They will take a leadership role in studies, present their work at international conferences and author associated manuscripts, and contribute to grant applications. The fellow will work with an established team, including research associates and analysts. They will also work closely with clinical collaborators at SickKids and partner institutions, including staff from Cardiology, Radiology and Obstetrics. Finally, they will also contribute to the supervision of graduate students through the University of Toronto department of Medical Biophysics.

MAIN RESPONSIBILITIES
Here’s What You’ll Get To Do:
The post-doctoral fellow will work closely with the PI (Chris Macgowan) and members of the research team to lead and assist in various aspects of the research process.

Research:
- Coordinate and carry out the planned work defined by a grant-funded CIHR Project
- Develop and apply novel MRI acquisition and reconstruction methods for fetal and pediatric research in cardiovascular physiology
• Interact with an international group of experts and stakeholders in research and industry using advanced imaging methods, providing excellent networking opportunities
• Gain training in the programming and operation of state-of-the-art medical imaging equipment
• Prepare study results, presentations, progress reports, and manuscripts
• Coordinate knowledge translation activities

**Education:**
• Learn to develop and lead research projects, including grant-writing, protocol development, manuscript writing, and project coordination
• Learn and influence the methodologies used to conduct research using advanced MRI methods
• Attend SickKids and other local learning opportunities aimed at development of your career as an independent researcher
• Share new knowledge with professional colleagues and members of the Research Team

**Leadership:**
• Co-supervise (with PI) data analysts, trainees, and students, and assist in the training and orientation of new staff
• Provide mentorship to team members
• Collaborate with the PI to plan and delegate research related assignments

**Here’s What You Need:**
• Essential to have a Doctoral degree in a technical field such as medical biophysics or biomedical engineering, with a focus on MRI data acquisition and reconstruction
• Beneficial to have experience in accelerated imaging and/or motion correction
• Essential to have experience in code development and MRI sequence programming
• Essential to have demonstrated an outstanding track-record of research productivity, including timely completion of a doctoral thesis, peer-reviewed publications, and collaborative research
• Essential to have knowledge of the principles of research design, in particular MRI studies of cardiovascular function
• Track-record of collaborative research projects involving high-level researchers
• Excellent problem solving and troubleshooting skills
• Excellent communication (verbal and written), interpersonal and organizational skills
• Good judgment and ability to work independently and as a team member
• Ability to work in a changing, multiple demand setting, to prioritize a large volume of work, and to meet deadlines efficiently

**Job Term:** Two-year contract, with possibility of renewal

**Our Commitment to Diversity**
The children and families we care for are from a variety of communities, and so are our employees. We welcome and encourage everyone to join our organization and be part of our team. When requested, SickKids will provide access and inclusion supports to eligible candidates to support their full engagement during the interview and assessment process. Information received related to access or inclusion will be addressed confidentially.
Thank you for your interest in joining SickKids. Only those applicants selected for an interview will be contacted. In accordance with our Hospital policy, employment at SickKids is conditional upon the Hospital’s receipt of all necessary documentation.

**FOR EXTERNAL APPLICANTS ONLY:** As a health care institution, our highest priority is the safety of patients, families and staff. As a result, we are adopting all prevention measures to ensure the safety of our patients, families and our staff. Therefore, any offer of employment is conditional upon you submitting proof that you have been fully vaccinated with a Health Canada or World Health Organization (WHO) approved COVID-19 vaccination as soon as possible and no later than fourteen (14) calendar days prior to the effective start date, in addition to satisfying any other condition(s) that may be set out in an offer. If a candidate fails to satisfy this condition (or any other condition(s) set out in an offer), any offer of employment shall be immediately rescinded.

**How to Apply**
**Tip:** Combine your cover letter and resume into ONE document of 20 pages or less as you cannot upload multiple documents as part of your application.

If you are still experiencing technical difficulties, please email ask.hr@sickkids.ca to send us a short description of the issues you are experiencing. Please note that we will not accept resumes sent to this inbox, but we are happy to respond to requests for technical assistance.