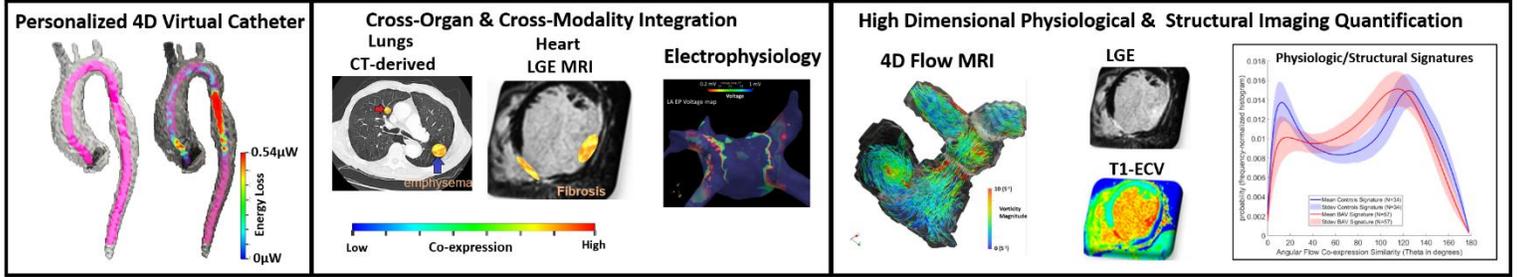


**Postdoctoral Position in Computational Cardiovascular Image/Flow Analysis**  
Dept. Radiology, Northwestern University, Chicago, IL, USA



**Position Summary:** The Personalized and Integrative Computational Cardiovascular Imaging (PIC-CVI) Lab within the Radiology Dept. at Northwestern University’s Chicago campus has an open postdoctoral position in Computational Cardiovascular MRI Research. We are seeking a highly motivated postdoctoral researcher in the field of biomedical engineering, computer science, computational medical image analysis or related field. The fellow will focus on developing novel advanced quantitative computational MRI techniques for measurement of cardiovascular flow, structure, and function and implement innovative data analysis algorithms, including from 4D Flow MRI, LGE MRI, inter-modality integration with Electrophysiology and CT. This includes but not limited to developing methods for high-dimensional data-field analysis techniques, fluid-dynamic based analysis, high-dimensional inter-modality data integration, and applying these techniques on patient data for deriving novel diagnostic & predictive markers for better risk stratification in adult and congenital cardiovascular diseases. The successful applicant will join a vibrant world-class research environment blending clinical studies with active interdisciplinary translational research to solving critical cardiovascular problems in close collaboration with world-renowned clinicians and Ph.D. imaging scientists.

**Lab Overview:** The Elbaz PIC-CVI lab focuses on developing novel advanced computational MRI analysis techniques to enable personalized & integrative comprehensive assessment of complex cardiovascular diseases. These include developing methods for noninvasive evaluation of advanced hemodynamics, precise quantification of high-dimensional physiologic & structural imaging data, and effective integration of MRI with other imaging modalities. These methods are then utilized to revealing new insights into underlying cardiovascular pathophysiologic mechanisms and developing novel diagnostic & predictive markers for better risk stratification in adult and congenital cardiovascular disease (more info: <https://www.piccvilab.northwestern.edu>).

**Responsibilities:** The postdoc fellow responsibilities include but not limited to:

- Develop and implement advanced computational cardiovascular image analysis techniques including for 4D Flow MRI, LGE MRI, inter-modality integration with Electrophysiology, and CT.
- Analysis and interpretation of MR and imaging data.
- Writing papers and assisting grant applications.

**Requirements:**

- Ph.D. in Biomedical Engineering, Computer Science, Medical Imaging and Image Analysis, Physics, Electrical Engineering, Mechanical Engineering, or related fields.
- At least 2-years of experience in quantitative/computational Medical Image Analysis.
- Strong Programming skills (Matlab, etc.).
- Track record publications in top-tier journals/conferences.
- Efficient English communication skills.

**Preferred:** Experience in at least two of the following:

- Cardiovascular MRI image analysis
- High-dimensional imaging data quantification methods (knowledge of vector and tensor field analysis is plus).
- Applied Fluid dynamics
- Stochastic/probabilistic image analysis techniques
- Inter-modality data fusion



**Facilities:** The MR research group at Northwestern University is multidisciplinary, including MR physicists, computer scientists, engineers, and cardiovascular diagnostic and interventional radiologists. Additional expertise spans the fields of informatics, biostatistics, cardiology, neuroradiology, and cardiac surgery, among others. The Center for Translational Imaging, an imaging core facility at Northwestern University's Chicago campus, houses two MR systems (1.5T Aera and 1.5T Sola) entirely dedicated to cardiovascular imaging research. Further, >15 clinical MR scanners located within Northwestern Memorial Hospital and Lurie Children's Hospital and close research collaboration with Siemens Cardiovascular MR Research and Development provide the unique opportunity to translate novel cardiovascular imaging techniques into clinical applications.

Northwestern University is an Equal Opportunity, Affirmative Action Employer of all protected classes, including veterans and individuals with disabilities. Women, racial and ethnic minorities, individuals with disabilities, and veterans are encouraged to apply. Hiring is contingent upon eligibility to work in the United States.

**To apply:** please email a CV and a one-page cover letter (please use the position title above as the email subject) to:

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